GRAPHIC EQUALIZER

GE-722

SERVICE MANUAL

KENWOOD

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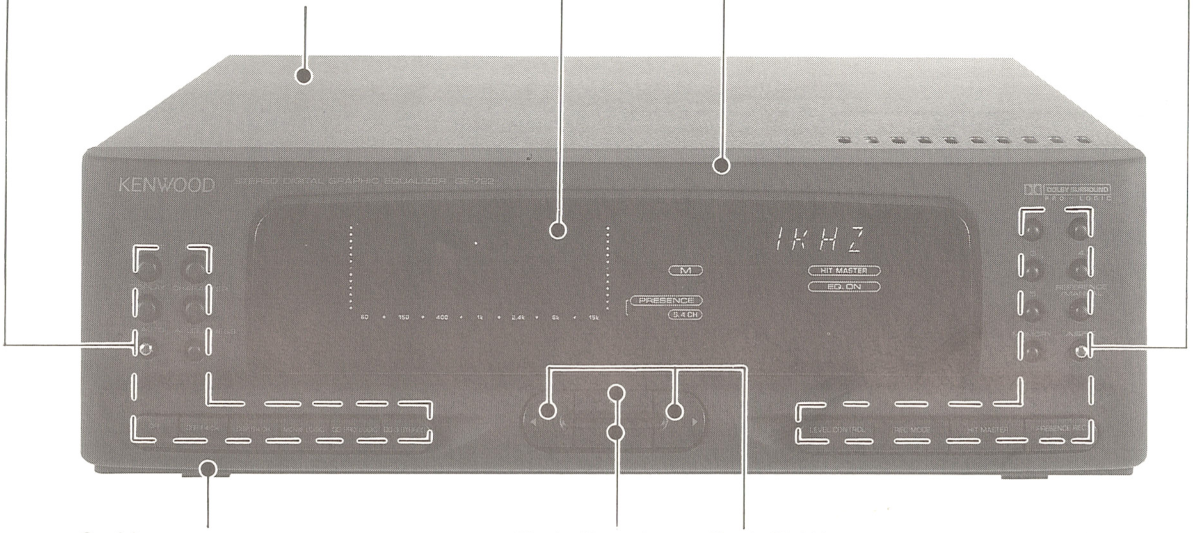
B51-4372-00 (O) 3615


KENWOOD
STEREO DIGITAL GRAPHIC EQUALIZER GE-722
DOLBY SURROUND PRO LOGIC
1KHZ
M
HIT MASTER
EQ. ON
PRESENCE
5.4 CH
60
150
400
1k
2.4k
6k
15k
LEVEL CONTROL
HIT MASTER
PRESENCE

Knob (Function)
(K29-4165-02)

Metallic cabinet
(A01-1977-01) : S
(A01-1989-01) : J

Front glass
(B10-1853-03)

Panel
(A60-0071-11)

Knob (1,2,3)
(K29-4166-02)

Cushion
(G11-2050-14) x 4

Knob (Down)
(K29-4164-03)

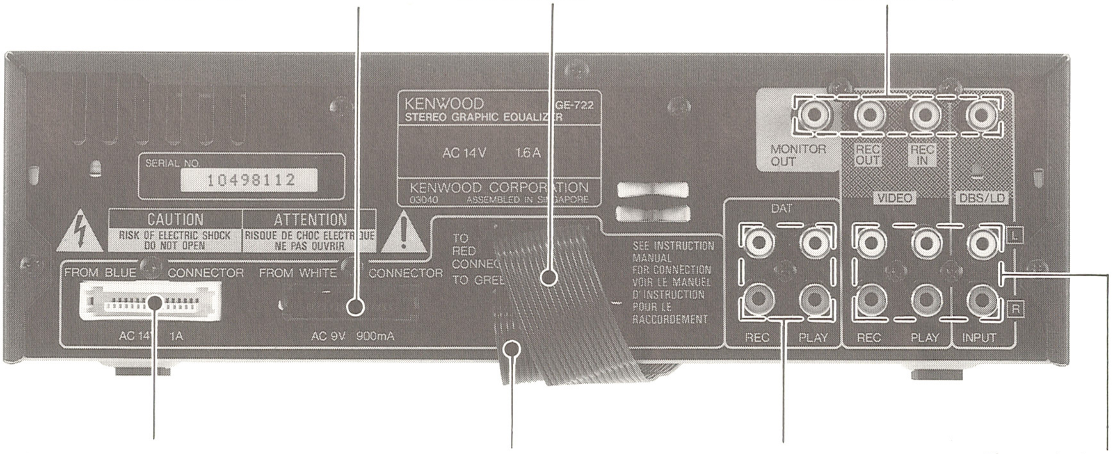
Knob (R / L)
(K29-4162-03)

S=SINGAPORE MADE
J=JAPAN MADE

Rectangular receptacle (BLK)
(E08-1509-05)

AC power cord (Red)
(E30-2666-05)

Phono jack
(E63-0024-05)


KENWOOD
GE-722
STEREO GRAPHIC EQUALIZER
AC 14V 1.6A
KENWOOD CORPORATION
ASSEMBLED IN SINGAPORE
SERIAL NO.
10498112
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
ATTENTION
RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
FROM BLUE CONNECTOR
FROM WHITE CONNECTOR
AC 14V 1A
AC 9V 900mA
TO RED CONNEC
TO GREE
SEE INSTRUCTION MANUAL FOR CONNECTION
VOIR LE MANUEL D'INSTRUCTION POUR LE RACCORDEMENT
MONITOR OUT
REC OUT
REC IN
VIDEO
DBS/LD
DAT
REC
PLAY
REC
PLAY
INPUT
L
R

Rectangular receptacle (WHT)
(E08-1510-05)

AC power cord (Green)
(E30-2665-05)

Phono jack (DAT)
(E63-0023-05)

Phono jack (Video / LD)
(E63-0022-05)

CAUTION : When doing repair of GE-722, be sure to have the customer bring the A-722, or use power supply jig RM-90PS, or supply to 16V AC to jumper leads W18 and W19 on X14-3200-00 PC board ass'y. If not get 16V AC, please order the A-848's power transformer (parts No. L07-0038-05 / 120V / 220V / 240V). Don't use the "RHEOSTAT".

CONTENTS/ACCESSORIES

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SPECIFICATIONS .... BACK COVER

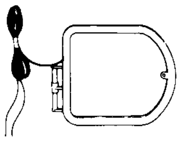
System name	Receiver	Graphic equalizer	Cassette deck	CD player	Speaker
UD-90	A-722	GE-722	X-722	DP-722	LS-722

Outer packing case	Instruction manual	Warranty card
H60-0028-04 (M, P, Y) : J	B60-0513-00 (M) : SPANISH	B46-0092-03 (K)
H60-0029-04 (X) : J	B60-0583-00 (M) : CHINA	B46-0094-03 (Y)
H60-0030-04 (T) : J	B60-0508-00 (E) : ENGLISH	B46-0095-03 (Y)
H60-0031-04 (K) : J	B60-0509-00 (E) : FRENCH	B46-0096-23 (X)
H60-0033-04 (M, P, Y) : S	B60-0510-00 (E) : GERMANY	B46-0122-13 (E)
H60-0034-04 (X) : S	B60-0511-00 (E) : NETHERLANDS	B46-0143-13 (T)
H60-0035-04 (T) : S	B60-0512-00 (E) : ITALY	

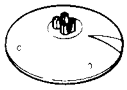
J=JAPAN MADE S=SINGAPORE MADE

ACCESSORIES

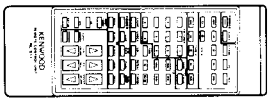
- AM loop antena 1
  (T90-0173-05) : J
  (T90-0174-05) : S



- Loop antenna stand 1
  (J19-2815-04)

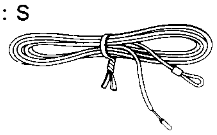


- Remote control unit 1
  (A70-0535-05)

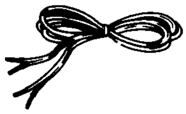


(Supplied with DP-722)

- FM indoor antenna 1
  (T90-0176-05) : J
  (T90-0175-05) : S

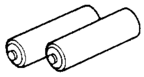


- Speaker cords 2
  (E30-1297-05) : RED/BLK
  (E30-5091-05) : BLU/BLK

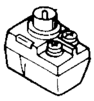


(Supplied with the LS-722)

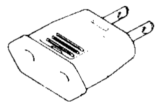
- Battery (R06 / AAA) 2
  (–)



- Antenna adaptor 1
  (T90-0136-05) T, E TYPE ONLY



- AC plug adaptor 1
  (E03-0115-05) M TYPE ONLY



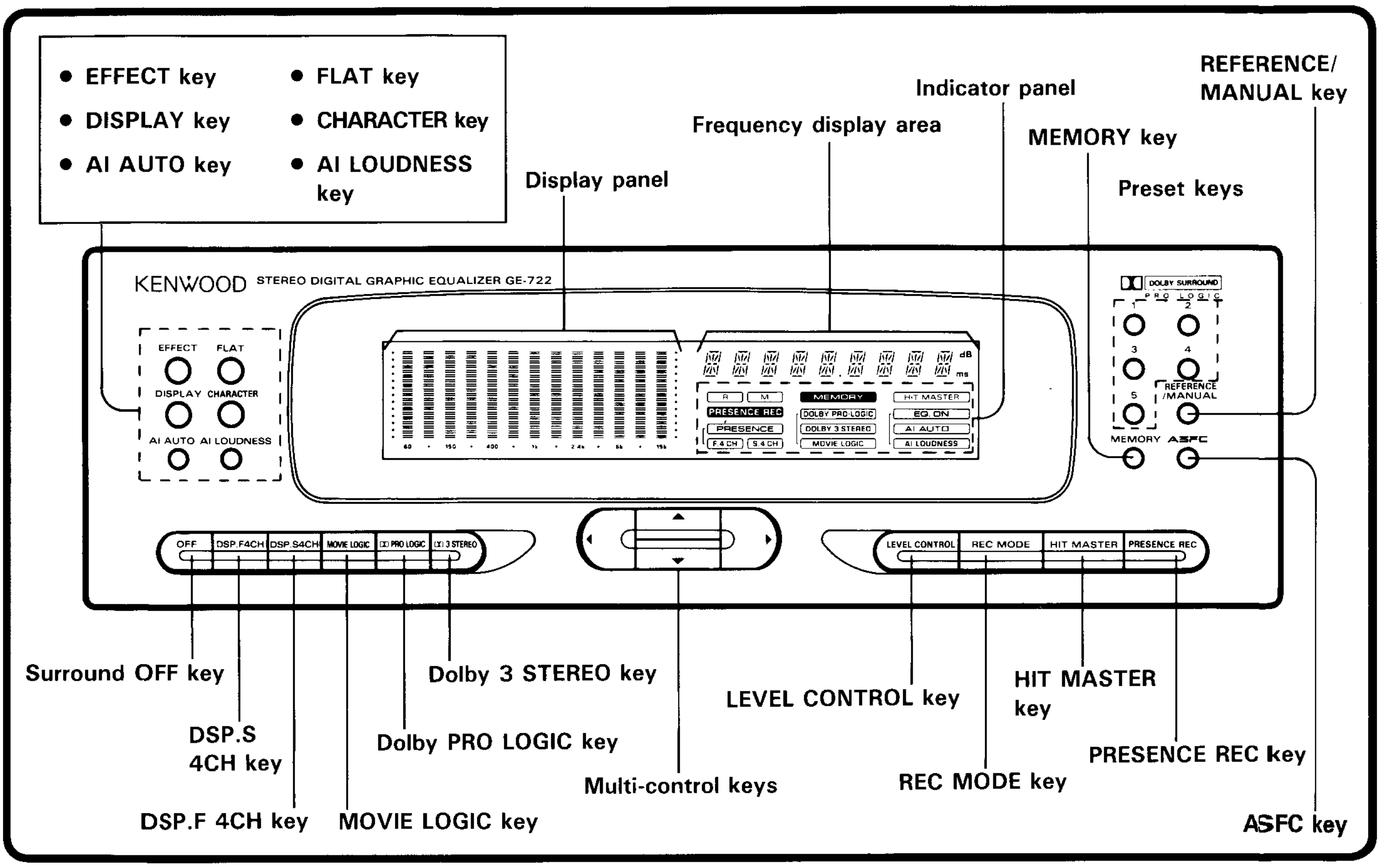
(Except for some areas)
For the unit with a European
AC plug in areas other than Europe.

J = JAPAN MADE
S = SINGAPORE MADE

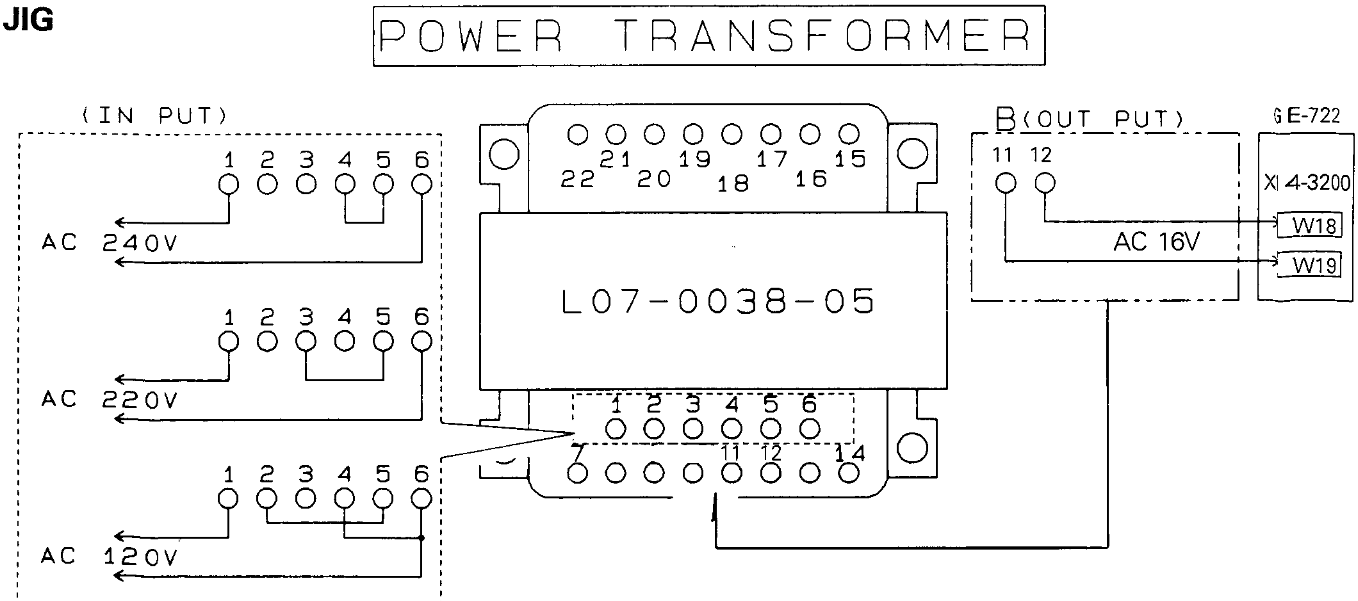
Note : A-722/L has accessories with no attached models.

CONTROLLES/ JIG

CONTROLLES


● EFFECT key
● FLAT key
● DISPLAY key
● CHARACTER key
● AI AUTO key
● AI LOUDNESS key
Display panel
Frequency display area
Indicator panel
MEMORY key
REFERENCE/ MANUAL key
Preset keys
KENWOOD STEREO DIGITAL GRAPHIC EQUALIZER GE-722
EFFECT
FLAT
DISPLAY
CHARACTER
AI AUTO
AI LOUDNESS
MEMORY
PRESENCE REC
PRESENCE
DOLBY PRO LOGIC
DOLBY 3 STEREO
MOVIE LOGIC
HIT MASTER
EQ ON
AI AUTO
AI LOUDNESS
DOLBY SURROUND
PRO LOGIC
REFERENCE /MANUAL
MEMORY
ASFC
OFF
DSP.F4CH
DSP.S4CH
MOVIE LOGIC
PRO LOGIC
3 STEREO
LEVEL CONTROL
REC MODE
HIT MASTER
PRESENCE REC
Surround OFF key
DSP.S 4CH key
DSP.F 4CH key
MOVIE LOGIC key
Dolby PRO LOGIC key
Dolby 3 STEREO key
Multi-control keys
LEVEL CONTROL key
REC MODE key
HIT MASTER key
PRESENCE REC key
ASFC key

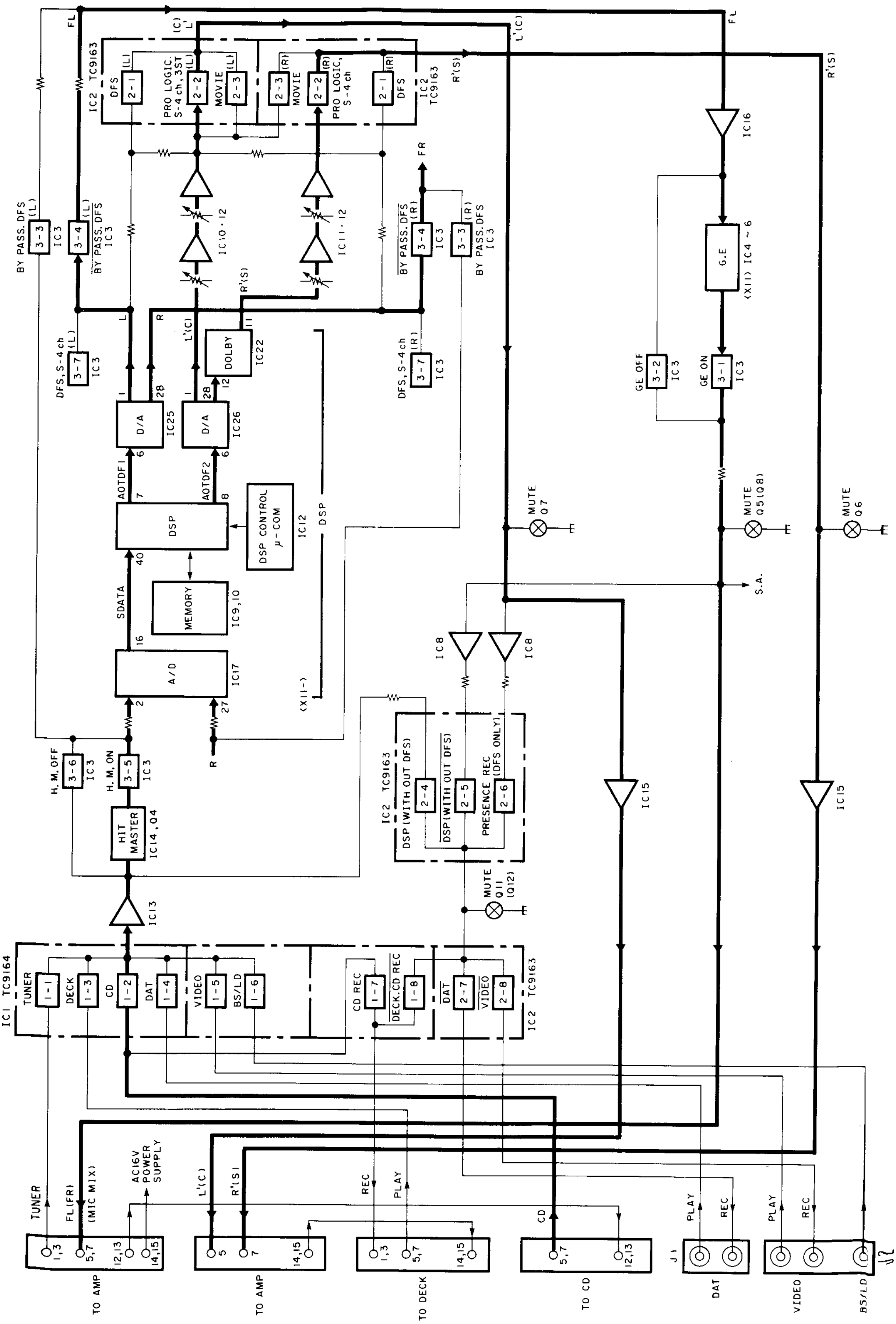
JIG


POWER TRANSFORMER
(IN PUT)
AC 240V
AC 220V
AC 120V
1 2 3 4 5 6
L07-0038-05
B(OUT PUT)
11 12
AC 16V
GE-722
X14-3200
W18
W19

CAUTION : When doing repair of GE-722, be sure to have the customer bring the A-722, or use power supply jig RM-90PS, or supply to 16V AC to jumper leads W18 and W19 on X14-3200-00 PC board ass'y. If not get 16V AC, please order the A-848's power transformer (parts No. L07-0038-05 / 120V / 220V / 240V). Don't use the "RHEOSTAT".

GE-722

BLOCK DIAGRAM



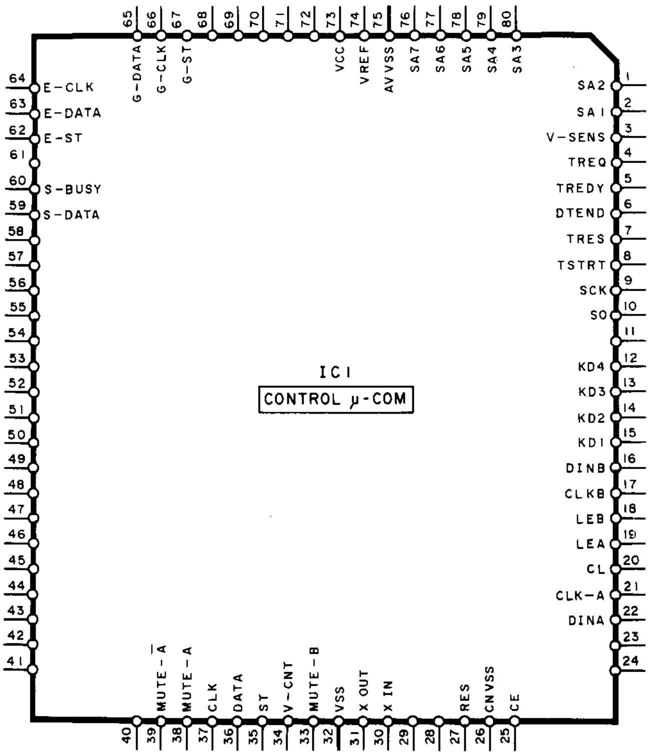
FL
(C) L'
L'(C)
R'(S)
IC2 TC9163
DFS (L) 2-1
PRO LOGIC, S-4ch,3ST (L) 2-2
MOVIE (L) 2-3
MOVIE (R) 2-3
PRO LOGIC, S-4ch (R) 2-2
DFS (R) 2-1
BY PASS.DFS (L) 3-3 IC3
3-4 (L) BY PASS.DFS IC3
IC10·12
IC11·12
FR
BY PASS.DFS (R) 3-4 IC3
3-3 (R) BY PASS.DFS IC3
DFS,S-4ch (L) 3-7 IC3
DFS,S-4ch (R) 3-7 IC3
L
R
L'(C)
R'(S)
DOLBY IC22
D/A IC25
D/A IC26
1
28
12
6
AOTDF1 7
AOTDF2 8
DSP
DSP CONTROL μ-COM IC12
DSP
(X11-)
40
SDATA
MEMORY IC9,10
16
A/D IC17
2
27
R
H.M.OFF 3-6 IC3
H.M.ON 3-5 IC3
HIT MASTER IC14,Q4
IC13
IC16
G.E (X11) IC4~6
GE OFF 3-2 IC3
GE ON 3-1 IC3
MUTE Q7
MUTE Q5(Q8)
MUTE Q6
S.A.
IC8
IC8
IC2 TC9163
DSP (WITH OUT DFS) 2-4
DSP(WITH OUT DFS) 2-5
PRESENCE REC (DFS ONLY) 2-6
IC15
IC15
MUTE Q11 (Q12)
IC1 TC9164
TUNER 1-1
DECK 1-3
CD 1-2
DAT 1-4
VIDEO 1-5
BS/LD 1-6
CD REC 1-7
DECK.CD REC 1-8
DAT 2-7
VIDEO 2-8
IC2 TC9163
TUNER
FL(FR)
(MIC MIX)
AC16V POWER SUPPLY
1,3
5,7
12,13
14,15
TO AMP
L'(C)
R'(S)
5
7
14,15
TO AMP
REC
PLAY
1,3
5,7
14,15
TO DECK
CD
5,7
12,13
TO CD
PLAY
REC
J1
DAT
PLAY
REC
VIDEO
BS/LD
J2

Symbol 1-3 3rd sw of IC1.

CIRCUIT DESCRIPTION

1. Main Microprocessor : M38063M6-151FP (IC1)

1-1. Pin connection diagram


IC1
CONTROL μ-COM
G-DATA
G-CLK
G-ST
VCC
VREF
AVVSS
SA7
SA6
SA5
SA4
SA3
SA2
SA1
V-SENS
TREQ
TREDY
DTEND
TRES
TSTRT
SCK
SO
KD4
KD3
KD2
KD1
DINB
CLKB
LEB
LEA
CL
CLK-A
DINA
E-CLK
E-DATA
E-ST
S-BUSY
S-DATA
MUTE-A
MUTE-A
CLK
DATA
ST
V-CNT
MUTE-B
VSS
X OUT
X IN
RES
CNVSS
CE
1
2
3
4
5
6
7
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11
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1-2. Pin functions

Pin No.	Pin Name	I/O	Functions
1	SA2	I	Spectrum analyzer
2	SA1	I	Spectrum analyzer
3	V-SENS	I	VOLUME SENS for AI LOUDNESS
4	TREQ	O	DSP(Digital Surround Processor) demand
5	TREDY	I	DSP ready
6	DTEND	I	DSP data end
7	TRES	O	DSP reset
8	TSTRT	O	DSP start
9	SCK	O	DSP clock
10	SO	O	DSP data
11	–	I	Not use
12 ~ 15	KD4 ~ 1	I	Key return
16	DINB	O	Grid data
17	CLKB	O	Grid clock
18	LEB	O	Grid latch
19	LEA	O	Segment latch
20	CL	O	Display clear
21	CLKA	O	Segment clock
22	DINA	O	Segment data
23, 24	–	I	Not use
25	$\overline{\mathrm{CE}}$	I	Backup enable
26	CNVss	–	GND
27	$\overline{\mathrm{RESET}}$	I	Reset

Pin No.	Pin Name	I/O	Functions
28, 29	–	I	Not use
30	XIN	–	Oscillator input
31	XOUT	–	Oscillator output
32	Vss	–	GND
33	MUTEB	O	Mute B
34	V-CNT	O	Video control
35	ST	O	Selector ST
36	DATA	O	Selector data
37	CLK	O	Selector clock
38	MUTEA	O	Mute A
39	$\overline{\mathrm{MUTEA}}$	O	Inverted Mute A
40 ~ 58	–	I	Not use
59	SDATA	I/O	Extra serial data
60	SBUSY	I/O	Extra serial busy
61	–	I	Not use
62	EST	O	Electric volume ST
63	EDATA	O	Electric volume data
64	ECLK	O	Electric volume clock
65	GDATA	O	GE electric volume data
66	GCLK	O	GE electric volume clock
68 ~ 72	–	I	Not use
73	Vcc	–	Power supply (5V)
74	VREF	–	Reference voltage
75	AVss	–	GND
76 ~ 80	SA7 ~ 3	I	Spectrum analyzer

Refer to page 29 on the Input sensitivity of spectrum analyzer.

CIRCUIT DESCRIPTION

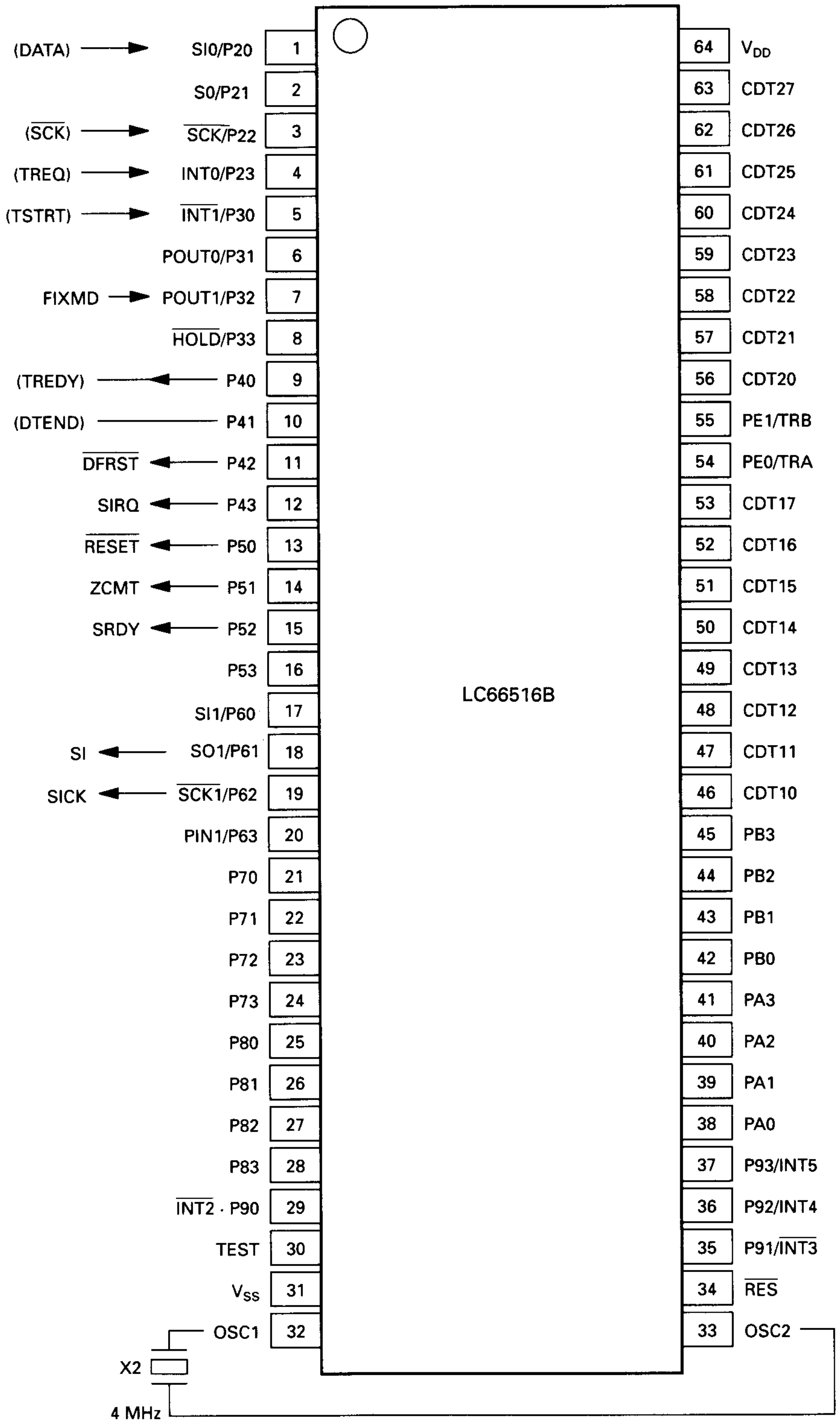
2. TEST MODE

TEST MODE	SETTING	RESETTING	CONTENTS
1. MEMORY CLEAR	Turn POWER sw to ON with pressing MEMORY key.	–	The memory is set initially (to RESET state), then the normal operation is started.
2. SELECTOR	Turn POWER sw to ON with pressing EJECT key.	Turn POWER sw to ON with pressing no key.	Display a) CD→TUNER→DECK→DAT→VIDEO→DBS/LD →CD (Freq. UP key) CD←TUNER←DECK←DAT←VIDEO←DBS/LD ←CD (Freq. DOWN key) b) No key is accepted except Freq. UP and DOWN.
3. GRAPHIC EQUALIZER	Turn POWER sw to ON with pressing FLAT key.	Turn POWER sw to ON with pressing no key.	a) All of segments turn on at first time. If pressed key, turn to normal indicator. b) Set segments as follows, M1 : ±0 (FLAT) M2 : +10 (All max.) M3 : −10 (All min.) c) In all of frequency range, EQ's UP/DOWN keys used to set 3 points of +10dB, 0 and −10dB. d) In DSP-OFF mode, function mode is set to Surround 4 channels and DSP output data is free. e) AI AUTO KEY (Remote controller) is no acceptable. f) Other operation is the same as the normal mode. g) SELECTOR is set to TUNER. h) Operation words with pressing EJECT key. i) By pressing CHARACTER key, turn on and check all of segments.
4. SEGMENT	Turn POWER sw to ON with pressing R/M key.	Turn POWER sw to ON with pressing no key.	a) ↓ ↓ ↓ ↓ interval → S1 S9 S17 S25 S33 ┐ ↓ ↓ ↓ ↓ ↓ 250ms S2 S10 S18 S26 S34 ←┘ ↓ ↓ ↓ ↓ ↓ S3 S11 S19 S27 S35 ↓ ↓ ↓ ↓ ↓ S4 S12 S20 S28 S36 ↓ ↓ ↓ ↓ ↓ S5 S13 S21 S29 S37 ↓ ↓ ↓ ↓ ↓ S6 S14 S22 S30 S38 ↓ ↓ ↓ ↓ ↓ S7 S15 S23 S31 S39 ↓ ↓ ↓ ↓ ↓ └ S8 S16 S24 S32 S40 Each group turns on for 250ms. If pressed any key, turn to normal display. b) After procedure a), mode changes to 3. GRAPHIC EQUALIZER. c) By pressing CHARACTER key, turn on and check all of segments.

CIRCUIT DESCRIPTION

3. DSP Microprocessor : LC66516B-4677 (IC12)

3-1. Pin connection diagram


(DATA)
SI0/P20
1
S0/P21
2
(SCK)
SCK/P22
3
(TREQ)
INT0/P23
4
(TSTRT)
INT1/P30
5
POUT0/P31
6
FIXMD
POUT1/P32
7
HOLD/P33
8
(TREDY)
P40
9
(DTEND)
P41
10
DFRST
P42
11
SIRQ
P43
12
RESET
P50
13
ZCMT
P51
14
SRDY
P52
15
P53
16
SI1/P60
17
SI
SO1/P61
18
SICK
SCK1/P62
19
PIN1/P63
20
P70
21
P71
22
P72
23
P73
24
P80
25
P81
26
P82
27
P83
28
INT2 · P90
29
TEST
30
VSS
31
OSC1
32
X2
4 MHz
LC66516B
64
VDD
63
CDT27
62
CDT26
61
CDT25
60
CDT24
59
CDT23
58
CDT22
57
CDT21
56
CDT20
55
PE1/TRB
54
PE0/TRA
53
CDT17
52
CDT16
51
CDT15
50
CDT14
49
CDT13
48
CDT12
47
CDT11
46
CDT10
45
PB3
44
PB2
43
PB1
42
PB0
41
PA3
40
PA2
39
PA1
38
PA0
37
P93/INT5
36
P92/INT4
35
P91/INT3
34
RES
33
OSC2

CIRCUIT DESCRIPTION

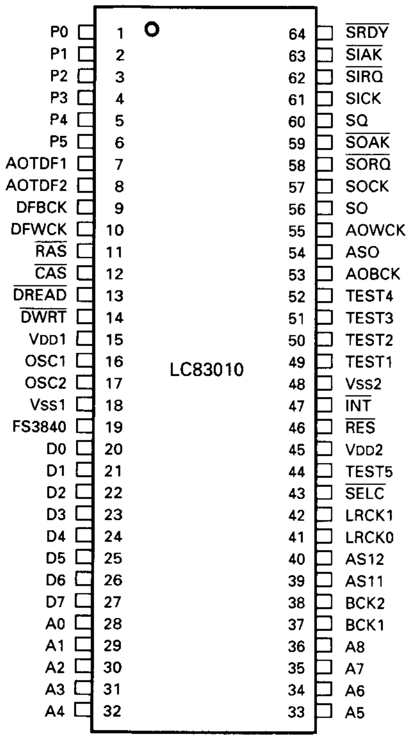
3-2. Pin functions

Pin No.	Pin name	I/O	Name	Description
1	SI0/P20	I	DATA	DATA signal input pin from system control μ-com
2	SO0			No used
3	$\overline{\text{SCK}}$/P22	I	$\overline{\text{SCK}}$	Clock signal input pin from system control μ-com
4	INT0/P23	I	TREQ	TREQ signal input pin from system control μ-com
5	INT1/P30	I	TSTRT	TSTRT signal input pin from system control μ-com
6	Pout0/P31	I		No used
7	Pout1/P32	I	FIXMD	Fixation terminal mode setting pin. Low: Normal mode High: Fixation terminal mode
8	$\overline{\text{HOLD}}$/P33	I	TSTRT	HOLD mode control input
9	P40	O	TREDY	TREDY signal output pin to system control μ-com
10	P41	O	DTEND	At mode change (command 0 ~ 2) and during clear the DRAM, transfer the data to DSP IC.
11	P42	O	$\overline{\text{DFRST}}$	Digital filter reset signal output pin (Normally High)
12	P43	O	SIRQ	DSP IC LC83010 SIRQ signal output pin
13	P50	O	$\overline{\text{RES}}$	DSP IC LC83010 Reset signal output pin (Normally High)
14	P51	O	ZCMT	Zero cross mute control signal output pin
15	P52	O	SRDY	DSP IC LC83010 SRDY signal output pin
16,17	P53, SU/P06			No used
18	SO1/P61	O	SI	DSP IC LC83010 SI signal output pin
19	$\overline{\text{SCK1}}$/P62	O	SICK	DSP IC LC83010 SICK signal output pin
20 ~ 28	PIN1/P63 P70 ~ P73 P80 ~ P83	O		No used
29	$\overline{\text{INT2}}$/P90			DSP IC LC83010 SIAK signal input pin
30	TEST			CPU test pin. Connected to Vss.
31	Vss			GND pin
32	OSC1	I		System clock oscillator pin
33	OSC2	O		System clock oscillator pin
34	$\overline{\text{RES}}$	I		System reset signal input pin
35 ~ 37	P91 ~93 $\overline{\text{INT3}}$ ~ $\overline{\text{INT 5}}$			No used
38 ~ 45	PA0 ~ PA3 PB0 ~ PB3	I I		No used
46 ~ 53	PC0	I	CDT10 ~ 17	Correspond to bit 0 ~ 7 of data address 1 of command data in the fixed pin mode.
54	PE0/TRA	I		Correspond to 2 low-order bits of command data in the fixed pin mode. The fixed pin mode can be set to 00, 01,02 or 03.
55	PE1/TRB	I		
56 ~ 63	P35	I	CDT20 ~ 27	Corresponds to bit 0 ~ 7 of data address 2 of command data in the fixed pin mode.
64	VDD			Power supply

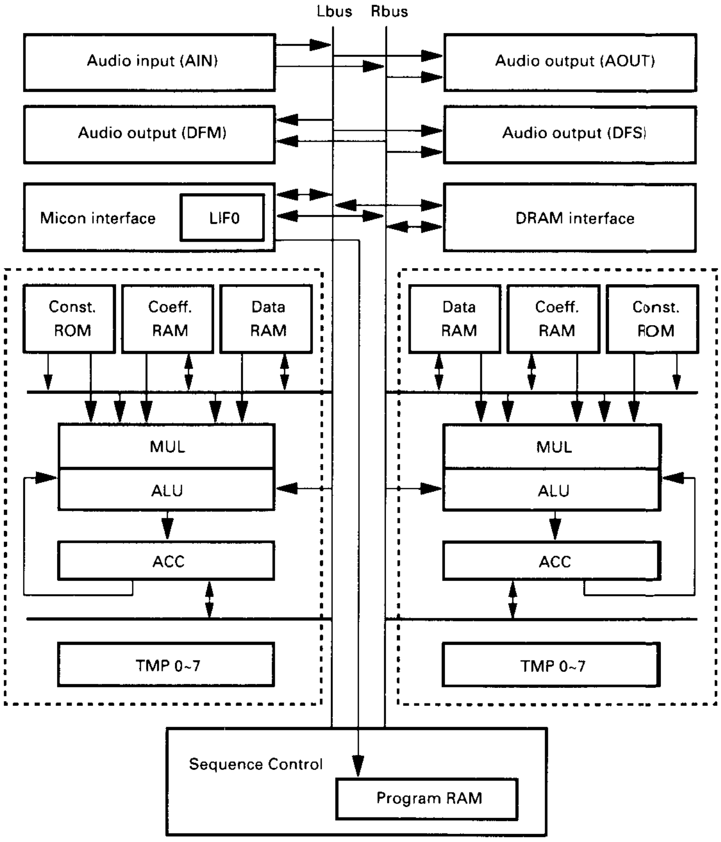
CIRCUIT DESCRIPTION

4. DSP IC : LC83010 (IC11)

4-1. Pin connection diagram


LC83010
P0 1
P1 2
P2 3
P3 4
P4 5
P5 6
AOTDF1 7
AOTDF2 8
DFBCK 9
DFWCK 10
$\overline{RAS}$ 11
$\overline{CAS}$ 12
$\overline{DREAD}$ 13
$\overline{DWRT}$ 14
VDD1 15
OSC1 16
OSC2 17
VSS1 18
FS3840 19
D0 20
D1 21
D2 22
D3 23
D4 24
D5 25
D6 26
D7 27
A0 28
A1 29
A2 30
A3 31
A4 32
33 A5
34 A6
35 A7
36 A8
37 BCK1
38 BCK2
39 AS11
40 AS12
41 LRCK0
42 LRCK1
43 $\overline{SELC}$
44 TEST5
45 VDD2
46 $\overline{RES}$
47 $\overline{INT}$
48 VSS2
49 TEST1
50 TEST2
51 TEST3
52 TEST4
53 AOBCK
54 ASO
55 AOWCK
56 SO
57 SOCK
58 $\overline{SORQ}$
59 $\overline{SOAK}$
60 SQ
61 SICK
62 $\overline{SIRQ}$
63 $\overline{SIAK}$
64 $\overline{SRDY}$

4-2. Block diagram

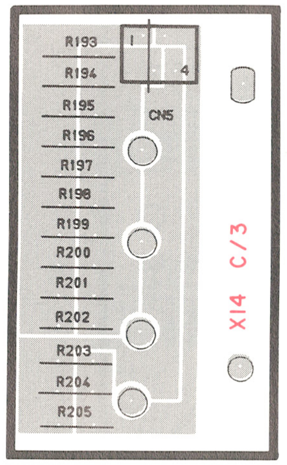

Lbus
Rbus
Audio input (AIN)
Audio output (AOUT)
Audio output (DFM)
Audio output (DFS)
Micon interface
LIFO
DRAM interface
Const. ROM
Coeff. RAM
Data RAM
Data RAM
Coeff. RAM
Const. ROM
MUL
ALU
ACC
MUL
ALU
ACC
TMP 0~7
TMP 0~7
Sequence Control
Program RAM

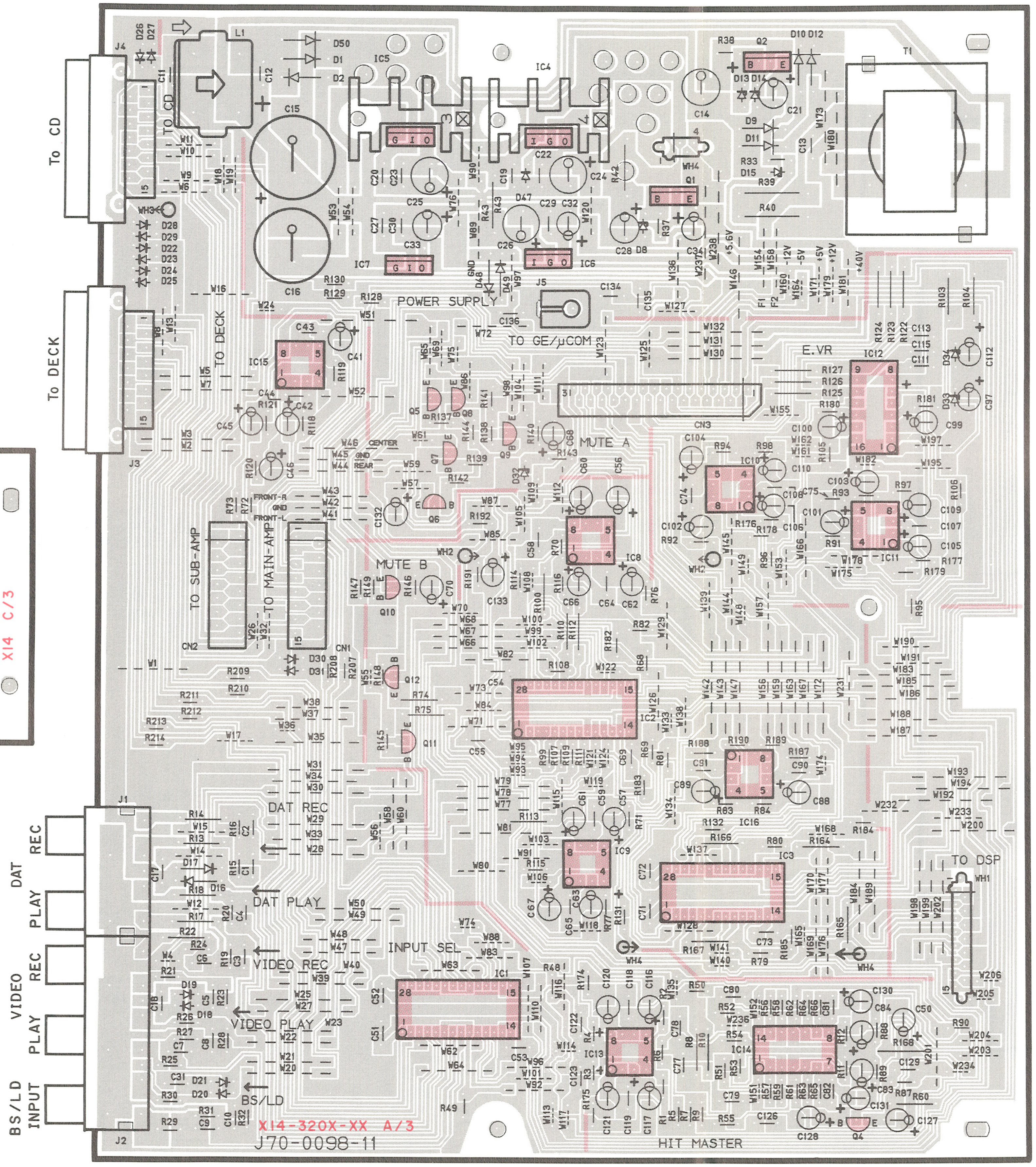
CIRCUIT DESCRIPTION

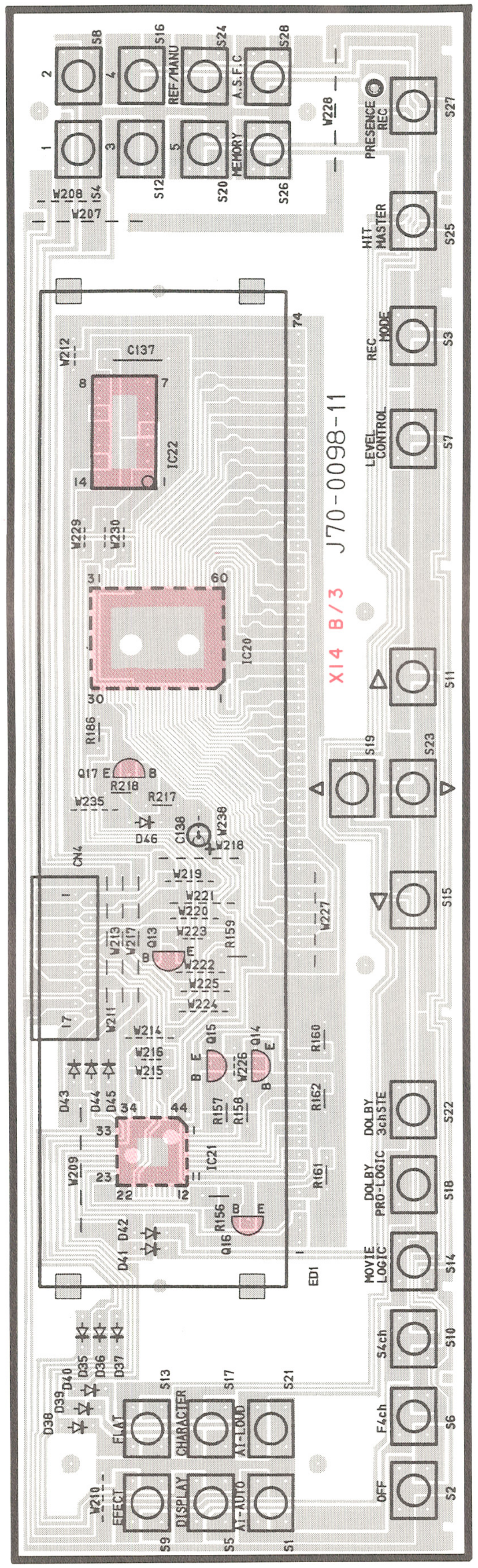
4-3. Pin functions

Pin No.	Pin name	I/O	Description	
1	P0	I	Digital mute - High: mute; Low: unmute during DSP program	
2	P1	I	Soft muting - High during DSP program: Soft mute with time constant of 1 ms; Low: Unmute	
3	P2	O	Overflow detection If the input data from the A/D converter becomes the maximum positive or negative value a low signal is output, held for 100 ms, and goes high.	
4	P3	I	Phase shifter control The phase shifter is turned on and off during 3-channel sound field program. Low: on; High; off. Always used with "LOW".	
5	P4	I	Direct sound add control Control whether direct sound is added in the DSP during sound field program. High: Add; Low: Do not add. Always used with "LOW".	
6	P5	I/O	General input/output port No used (open)	
7	AOTDF2	O	Audio data output 1 C ch and S ch data is output during Dolby pro logic and 4-ch sound field. If 3 stereo and 3-CH are set, only C ch data is output.	
8	AOTDF2	O	Audio data output 2 Decoded L/R data is output for Dolby. The L/R sound field signal is output for sound field.	
9	DFBCK	O	Bit clock for AOTDF 1 and 2 48 fs bit clock is output.	
10	DFWCK	O	Word clock for AOTDF 1 and 2 No used	
11	$\overline{RAS}$	O	For row address strobe DRAM access control	
12	$\overline{CAS}$	O	For column address strobe DRAM access control	
13	$\overline{DREAD}$	O	DRAM read control signal	
14	$\overline{DWRT}$	O	DRAM write control signal	
15, 45	VDD1, 2	I	Power supply pin	
18, 48	VSS1, 2		GND pin	
16	OSC1	I	Crystal oscillator pin	
17	OSC2	O	Crystal oscillator pin	
19	FS3840	O	384fs output pin	
20 ~ 27	D0 ~ D7	I/O	DRAM data I/O pin	
28 ~ 36	A0 ~ A8	O	DRAM address output pin (A8 is no used)	
37	BCK1	I	No used	
38	BCK2	O	Bit clock output pin 32fs bit clock output for A/D	
39	ASI1	I	No used	
40	ASI2	I	Audio data input pin 2 Data input from A/D	
41	LRCKO	O	L/R clock output pin	
42	LRCKI	I	No used	
43	$\overline{SELC}$	I	Self oscillation and external clock input switching	
44	TEST 5	O	Test pin Used by open	
46	$\overline{RES}$	I	Reset pin	
47	$\overline{INT}$	I	No used	
49 ~ 52	TEST 1 ~ 4	I	Test pin Connected to GND	
53	AOBCK	O	No used	
54	ASO	O	Audio data output (overflow detection)	
55 ~ 59	AOWCK etc.		No used	
60	SI	I	Serial data input from μ-com	DSP ↔μ-com interface
61	SICK	I	Serial clock input of SI input	
62	$\overline{SIRQ}$	I	SI request signal input	
63	SIAK	O	Output signal to indicate that the SI serial communication is executing	
64	$\overline{SRDY}$	I	Input signal to indicate that the mail box communication is finished	

PC BOARD (COMPONENT SIDE VIEW)

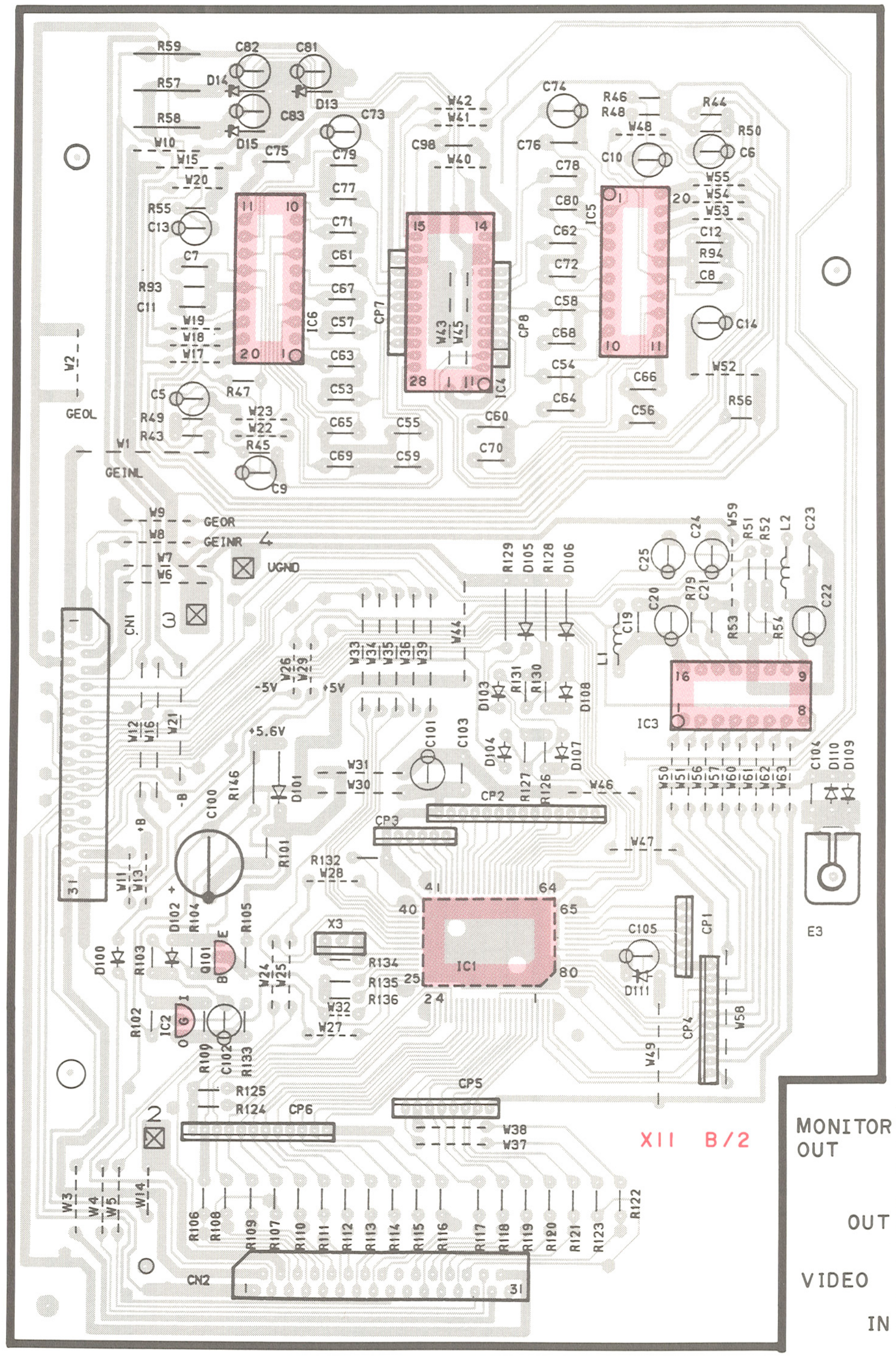

CN5
R193
R194
R195
R196
R197
R198
R199
R200
R201
R202
R203
R204
R205
X14 C/3

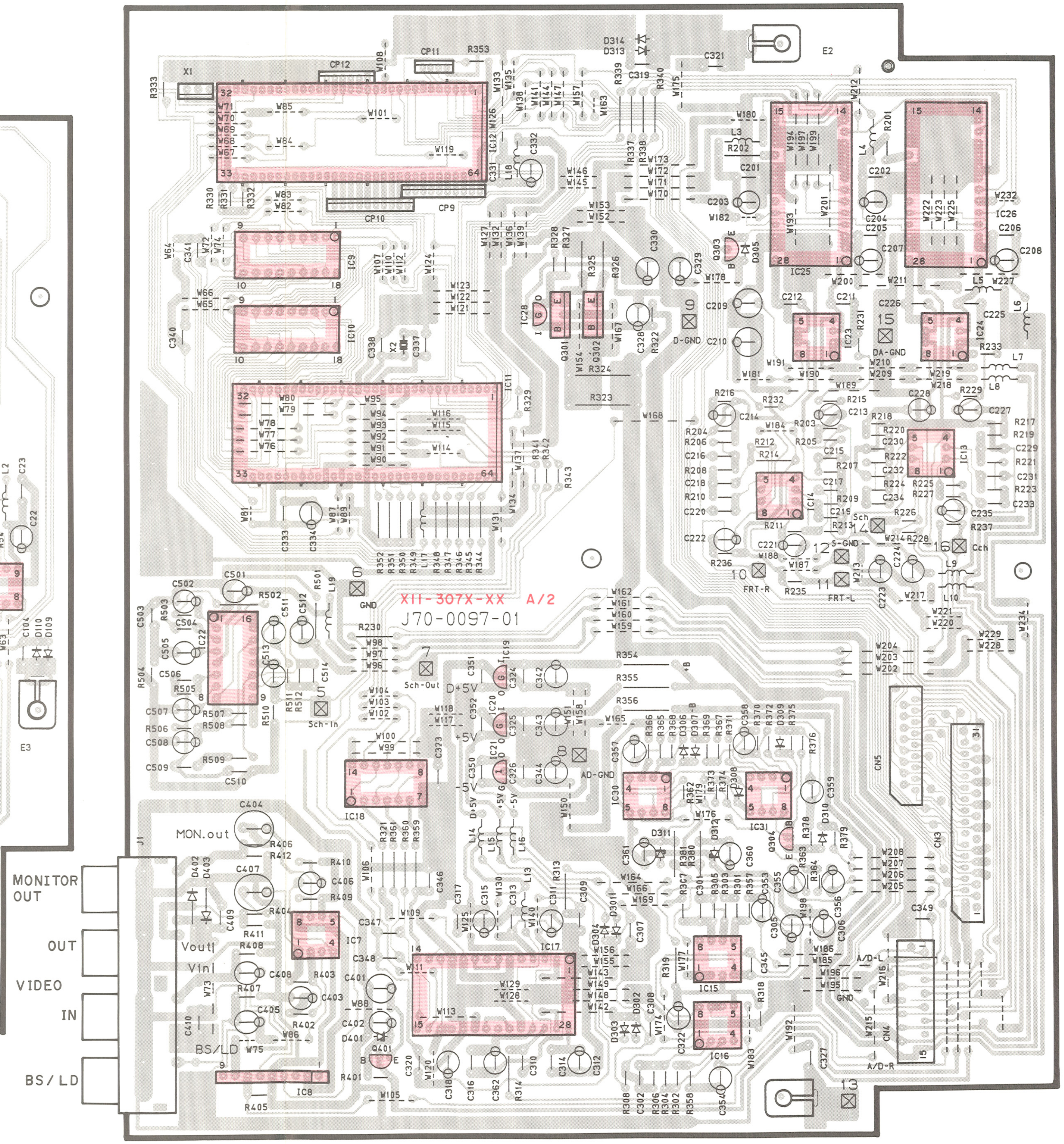

To CD
To DECK
DAT REC
DAT PLAY
VIDEO REC
VIDEO PLAY
BS/LD INPUT
J4
J3
J1
J2
TO CD
TO DECK
TO SUB-AMP
TO MAIN-AMP
POWER SUPPLY
TO GE/µCOM
MUTE A
MUTE B
E.VR
CENTER
GND
REAR
FRONT-R
FRONT-L
DAT REC
DAT PLAY
VIDEO REC
VIDEO PLAY
INPUT SEL
BS/LD
TO DSP
HIT MASTER
T1
L1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
CN1
CN2
CN3
X14-320X-XX A/3
J70-0098-11


REF/MANU
A.S.F.C
MEMORY
PRESENCE REC
HIT MASTER
REC MODE
LEVEL CONTROL
DOLBY 3chSTE
DOLBY PRO-LOGIC
MOVIE LOGIC
5ch
F4ch
OFF
FLAT
CHARACTER
AT-LOUD
EFECT
DISPLAY
AT-AUTO
IC20
IC21
IC22
CN4
X14 B/3
J70-0098-11

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (COMPONENT SIDE VIEW)

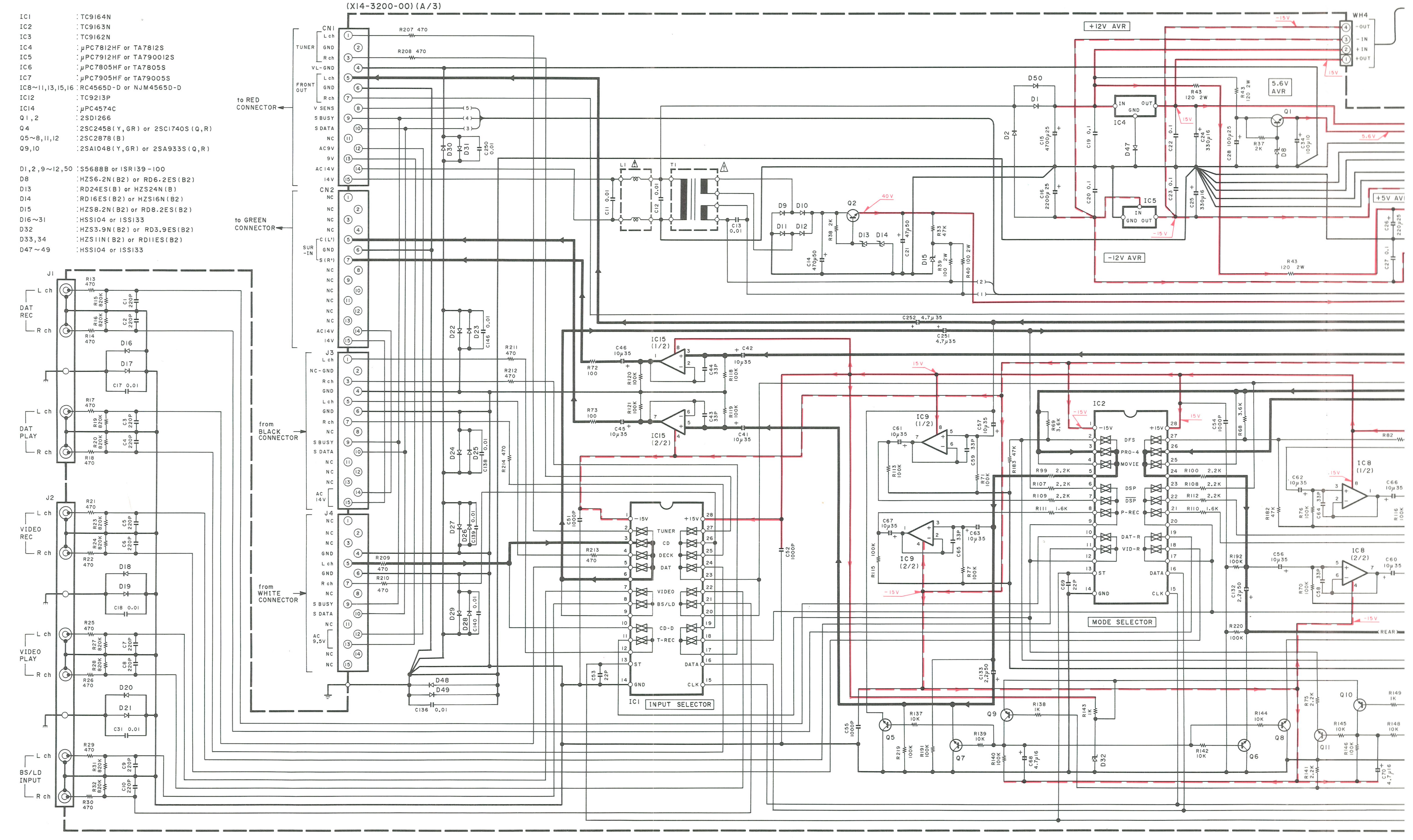

X11 B/2
IC1
IC3
IC4
IC5
IC6
CN1
CN2
GEOL
GEINL
GEOR
GEINR
UGND
E3

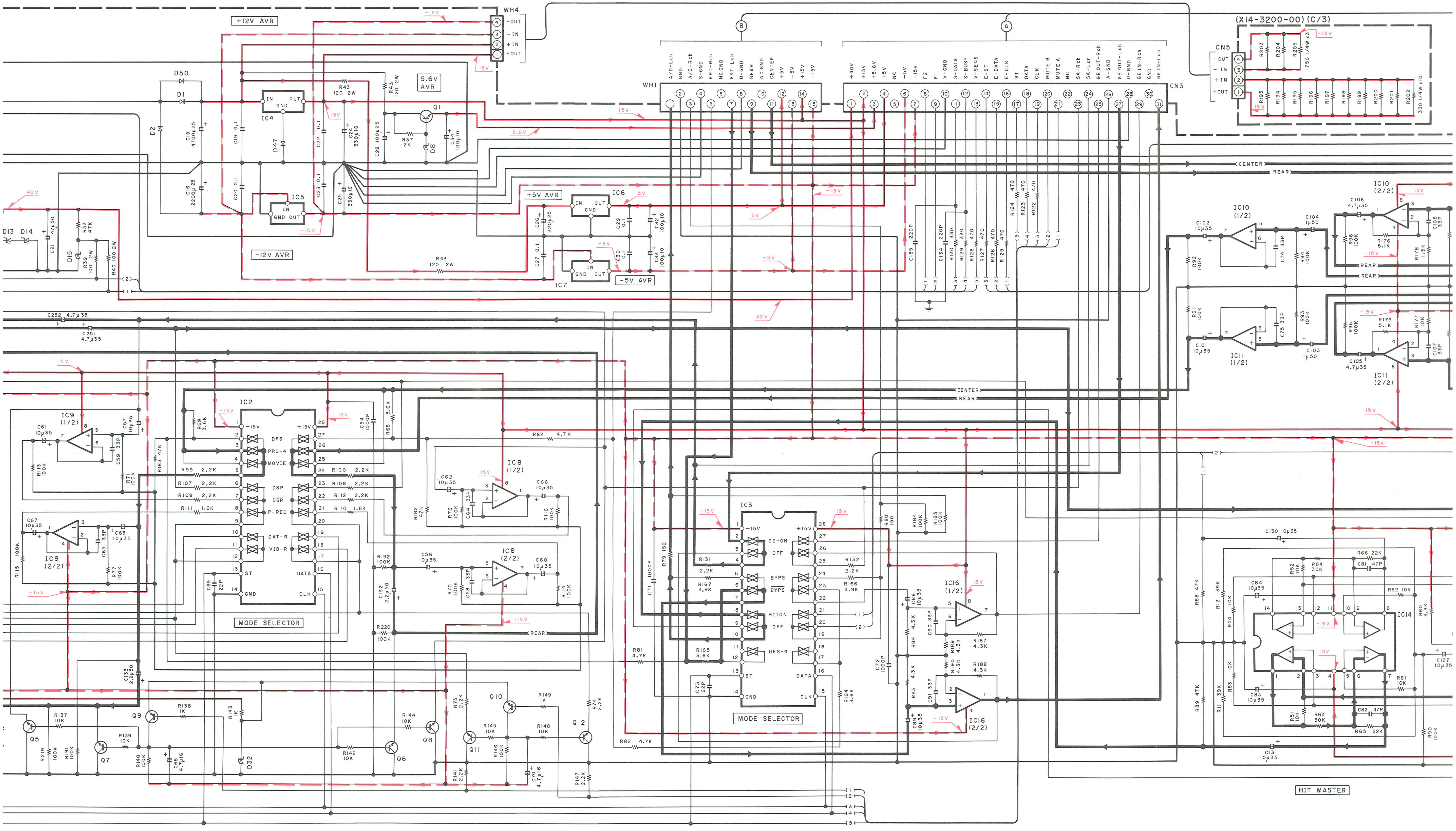

X11-307X-XX A/2
J70-0097-01
MONITOR OUT
OUT
VIDEO
IN
BS/LD
MON.out
Vout
Vin
J1
E2
CN3
CN4
CN5
D-GND
DA-GND
AD-GND
GND
FRT-R
FRT-L
Sch-Out
Sch-In
A/D-L
A/D-R

Refer to the schematic diagram for the values of resistors and capacitors.

IC1 : TC9164N
IC2 : TC9163N
IC3 : TC9162N
IC4 : μPC7812HF or TA7812S
IC5 : μPC7912HF or TA79012S
IC6 : μPC7805HF or TA7805S
IC7 : μPC7905HF or TA79005S
IC8~11,13,15,16 : RC4565D-D or NJM4565D-D
IC12 : TC9213P
IC14 : μPC4574C
Q1,2 : 2SD1266
Q4 : 2SC2458(Y,GR) or 2SC1740S(Q,R)
Q5~8,11,12 : 2SC2878(B)
Q9,10 : 2SA1048(Y,GR) or 2SA933S(Q,R)

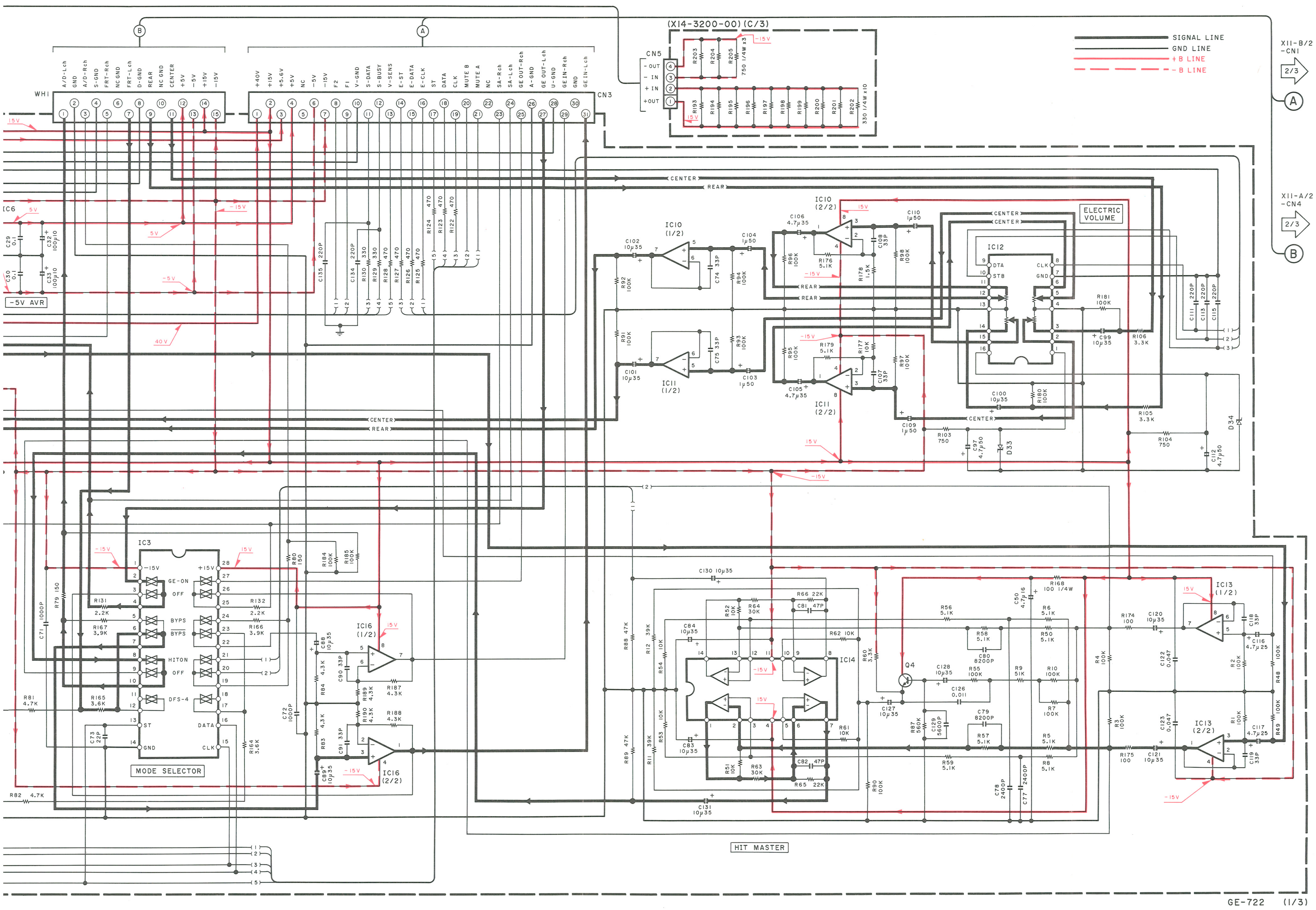
D1,2,9~12,50 : S5688B or ISR139-100
D8 : HZS6.2N(B2) or RD6.2ES(B2)
D13 : RD24ES(B) or HZS24N(B)
D14 : RD16ES(B2) or HZS16N(B2)
D15 : HZS8.2N(B2) or RD8.2ES(B2)
D16~31 : HSS104 or ISS133
D32 : HZS3.9N(B2) or RD3.9ES(B2)
D33,34 : HZS11N(B2) or RD11ES(B2)
D47~49 : HSS104 or ISS133


(X14-3200-00)(A/3)
CN1
TUNER
FRONT OUT
to RED CONNECTOR
V SENS
S BUSY
S DATA
AC9V
9V
AC14V
14V
CN2
to GREEN CONNECTOR
SUR -IN
J3
from BLACK CONNECTOR
J4
from WHITE CONNECTOR
J1
DAT REC
DAT PLAY
J2
VIDEO REC
VIDEO PLAY
BS/LD INPUT
L ch
R ch
IC1
INPUT SELECTOR
TUNER
CD
DECK
DAT
VIDEO
BS/LD
CD-D
T-REC
ST
GND
DATA
CLK
IC2
MODE SELECTOR
DFS
PRO-4
MOVIE
DSP
P-REC
DAT-R
VID-R
IC15 (1/2)
IC15 (2/2)
IC9 (1/2)
IC9 (2/2)
IC8 (1/2)
IC8 (2/2)
IC4
IC5
+12V AVR
-12V AVR
5.6V AVR
+5V AVR
WH4
-OUT
-IN
+IN
+OUT
L1
T1
Q1
Q2
Q5
Q6
Q7
Q8
Q9
Q10
Q11
40V
15V
-15V
5.6V
REAR


WH4
+12V AVR
-12V AVR
5.6V AVR
+5V AVR
-5V AVR
IC4
IC5
IC6
IC7
Q1
D50
D1
D2
D47
D8
D13
D14
D15
WH1
CN3
CN5
(X14-3200-00) (C/3)
A/D-Lch
A/D-Rch
S-GND
FRT-Rch
NC GND
FRT-Lch
D-GND
NC GND
REAR
CENTER
+5V
-5V
+15V
-15V
+40V
+15V
+5.6V
+5V
NC
-5V
-15V
F2
F1
V-GND
S-DATA
S-BUSY
V-SENS
E-ST
E-DATA
E-CLK
ST
DATA
CLK
MUTE B
MUTE A
NC
SA-Rch
SA-Lch
GE OUT-Rch
A-GND
GE OUT-Lch
U-GND
GE IN-Rch
GND
GE IN-Lch
CENTER
REAR
IC10 (1/2)
IC10 (2/2)
IC11 (1/2)
IC11 (2/2)
IC2
DFS
PRO-4
MOVIE
DSP
DSP
P-REC
DAT-R
VID-R
ST
DATA
GND
CLK
MODE SELECTOR
IC8 (1/2)
IC8 (2/2)
IC9 (1/2)
IC9 (2/2)
IC3
GE-ON
OFF
BYPS
BYPS
HITON
OFF
DFS-4
ST
DATA
GND
CLK
MODE SELECTOR
IC16 (1/2)
IC16 (2/2)
IC14
HIT MASTER
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
D32
40V
15V
-15V
5.6V
5V
-5V

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedanc voltmeter. Values may vary slightly due to variatio between individual instruments or/and units.


(X14-3200-00) (C/3)
SIGNAL LINE
GND LINE
+B LINE
-B LINE
X11-B/2 -CN1
2/3
X11-A/2 -CN4
2/3
A
B
WH1
CN3
CN5
-OUT
-IN
+IN
+OUT
R193 R194 R195 R196 R197 R198 R199 R200 R201 R202 330 1/4W x10
R203 R204 R205 750 1/4W x3
A/D-Lch
GND
A/D-Rch
S-GND
FRT-Rch
NC GND
FRT-Lch
D-GND
REAR
NC GND
CENTER
+5V
-5V
+15V
-15V
+40V
+15V
+5.6V
+5V
NC
-5V
-15V
F2
F1
V-GND
S-DATA
S-BUSY
V-SENS
E-ST
E-DATA
E-CLK
ST
DATA
CLK
MUTE B
MUTE A
NC
SA-Rch
SA-Lch
GE OUT-Rch
A-GND
GE OUT-Lch
U-GND
GE IN-Rch
GND
GE IN-Lch
CENTER
REAR
IC6
-5V AVR
IC10 (1/2)
IC10 (2/2)
IC11 (1/2)
IC11 (2/2)
IC12
ELECTRIC VOLUME
DTA
STB
CLK
GND
IC3
GE-ON
OFF
BYPS
BYPS
HITON
OFF
DFS-4
ST
GND
DATA
CLK
MODE SELECTOR
IC16 (1/2)
IC16 (2/2)
IC14
Q4
IC13 (1/2)
IC13 (2/2)
D33
D34
HIT MASTER

GE-722 (1/3)

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

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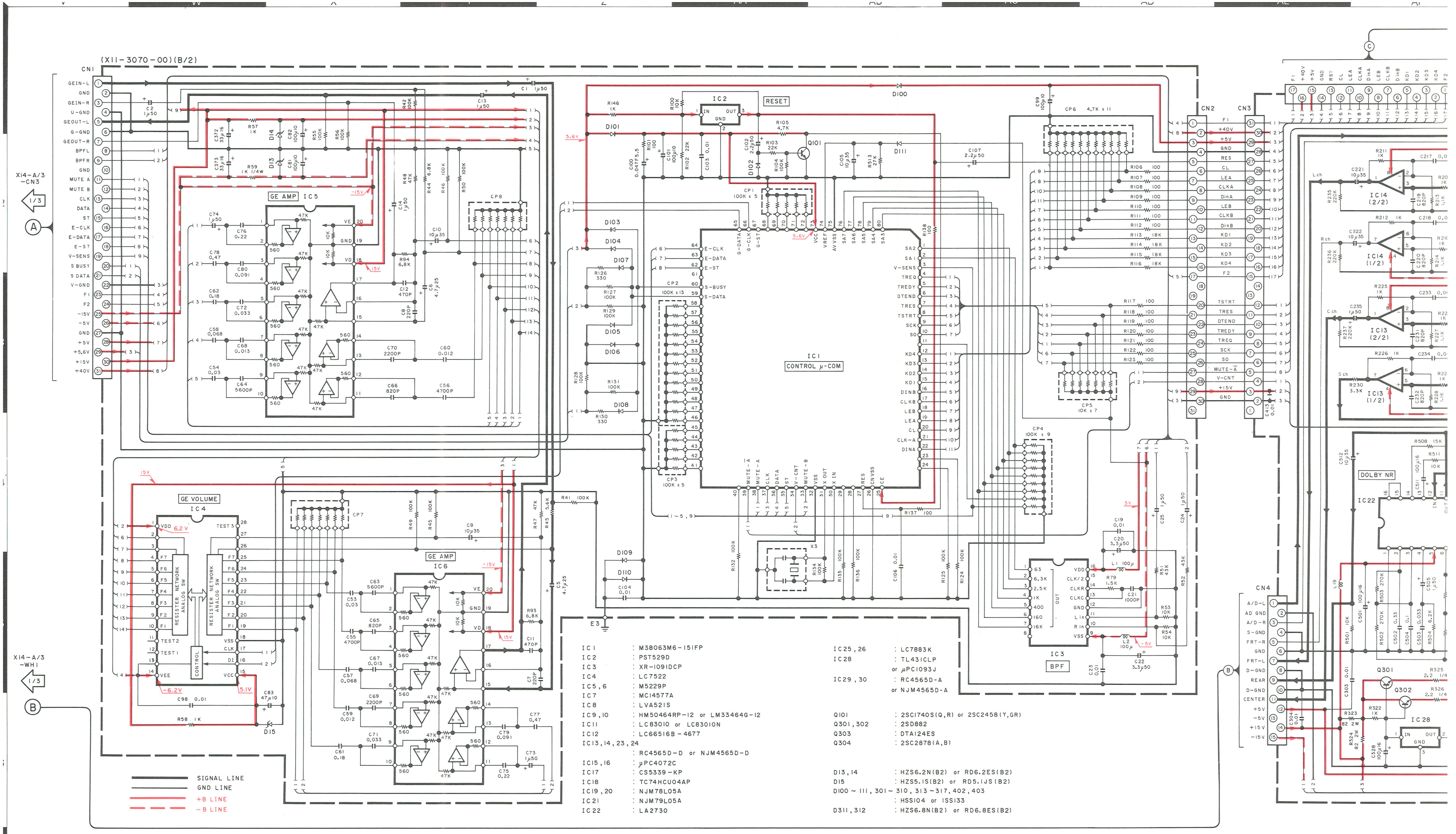
GE-722
KENWOOD

Y09-3800-00


(X11-3070-00)(B/2)
CN1
X14-A/3 -CN3
1/3
A
X14-A/3 -WH1
B
GE AMP IC5
GE AMP IC6
GE VOLUME IC4
RESISTER NETWORK ANALOG SW
CONTROL
IC2
RESET
IC1
CONTROL μ-COM
IC3
BPF
CN2
CN3
CN4
IC14 (2/2)
IC14 (1/2)
IC13 (2/2)
IC13 (1/2)
DOLBY NR
IC22
IC28
Q101
Q301
Q302
E3
SIGNAL LINE
GND LINE
+B LINE
−B LINE

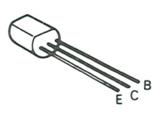
IC1 : M38063M6-151FP
IC2 : PST529D
IC3 : XR-1091DCP
IC4 : LC7522
IC5,6 : M5229P
IC7 : MC14577A
IC8 : LVA521S
IC9,10 : HM50464RP-12 or LM33464G-12
IC11 : LC83010 or LC83010N
IC12 : LC66516B-4677
IC13,14,23,24 : RC4565D-D or NJM4565D-D
IC15,16 : μPC4072C
IC17 : CS5339-KP
IC18 : TC74HCU04AP
IC19,20 : NJM78L05A
IC21 : NJM79L05A
IC22 : LA2730

IC25,26 : LC7883K
IC28 : TL431CLP or μPC1093J
IC29,30 : RC4565D-A or NJM4565D-A

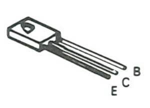
Q101 : 2SC1740S(Q,R) or 2SC2458(Y,GR)
Q301,302 : 2SD882
Q303 : DTA124ES
Q304 : 2SC2878(A,B)

D13,14 : HZS6.2N(B2) or RD6.2ES(B2)
D15 : HZS5.1S(B2) or RD5.1JS(B2)
D100 ~ 111, 301 ~ 310, 313 ~ 317, 402, 403 : HSS104 or ISS133
D311,312 : HZS6.8N(B2) or RD6.8ES(B2)

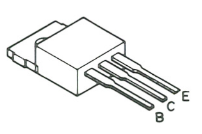
2SC2878



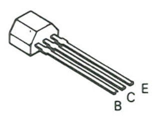
2SD882



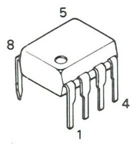
2SD1266



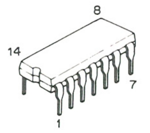
DTA124ES RN2203
2SA1048 2SA933S
2SC1740S 2SC2458



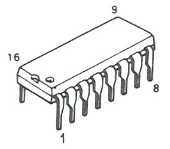
NJM4565D-A
NJM4565D-D
UPC1093J



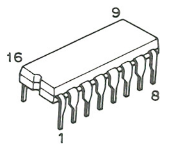
TC74HCU04AP UPC4574C
TC74HC02AP UPD74HC02C



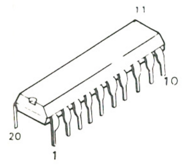
LA2730
XR-1091DCP



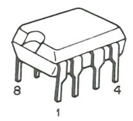
TC9213P



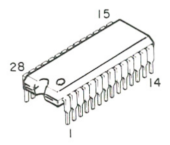
M5229P



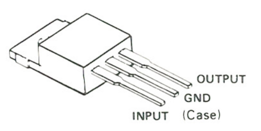
RC4565D-A
RC4565D-D



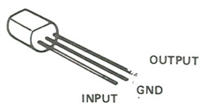
LC7522
LC7883K



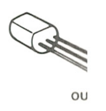
UPC7805HF
UPC7812HF

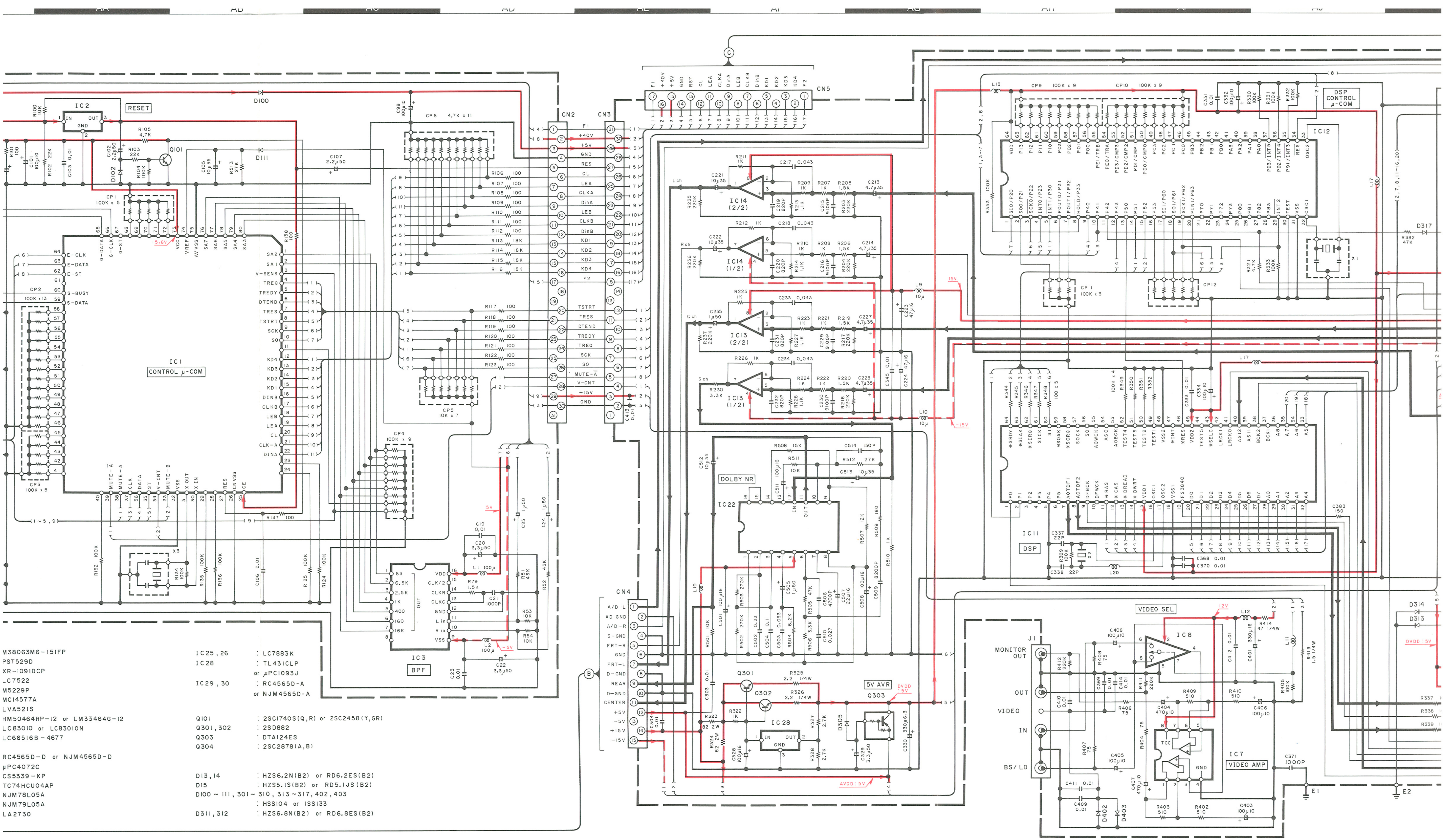

OUTPUT
GND
INPUT
(Case)

PST529D


OUTPUT
GND
INPUT

NJM780




IC1
CONTROL μ-COM
IC2
RESET
IC3
BPF
IC11
DSP
IC12
DSP CONTROL μ-COM
IC13 (1/2)
IC13 (2/2)
IC14 (1/2)
IC14 (2/2)
IC22
DOLBY NR
IC28
IC7
VIDEO AMP
IC8
VIDEO SEL
5V AVR
Q303
Q101
Q301
Q302
CN2
CN3
CN4
CN5
J1
MONITOR OUT
OUT
VIDEO
IN
BS/LD
E1
E2

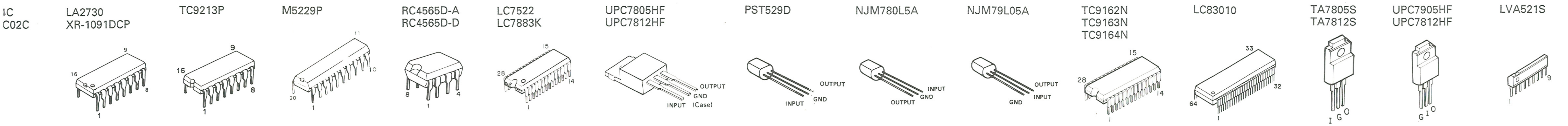
M38063M6-151FP
PST529D
XR-1091DCP
LC7522
M5229P
MC14577A
LVA521S
HM50464RP-12 or LM33464G-12
LC83010 or LC83010N
LC66516B-4677

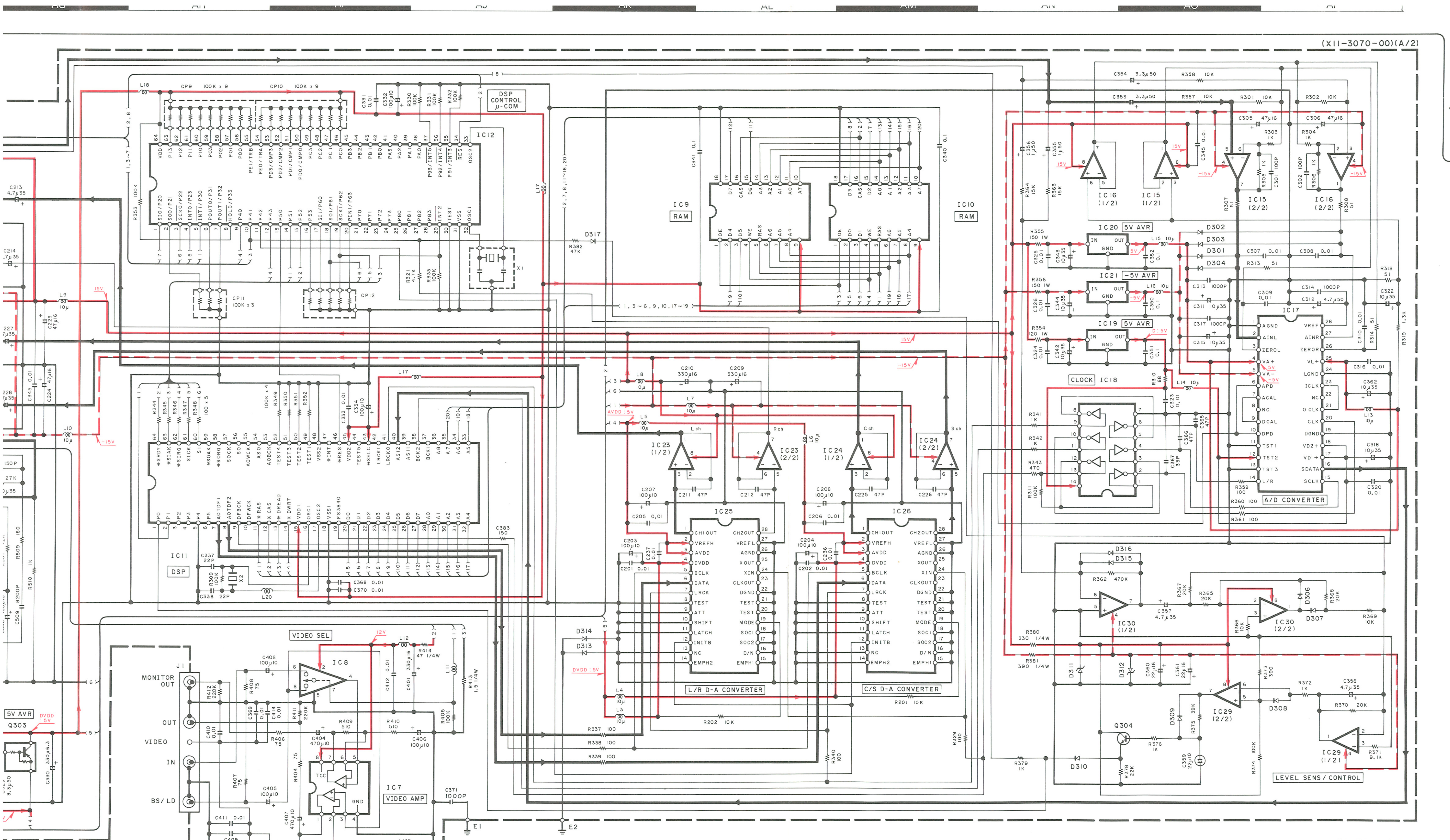
RC4565D-D or NJM4565D-D
μPC4072C
CS5339-KP
TC74HCU04AP
NJM78L05A
NJM79L05A
LA2730

IC25, 26 : LC7883K
IC28 : TL431CLP
or μPC1093J
IC29, 30 : RC4565D-A
or NJM4565D-A

Q101 : 2SC1740S(Q,R) or 2SC2458(Y,GR)
Q301, 302 : 2SD882
Q303 : DTA124ES
Q304 : 2SC2878(A,B)

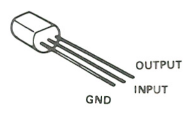
D13, 14 : HZS6.2N(B2) or RD6.2ES(B2)
D15 : HZS5.1S(B2) or RD5.1JS(B2)
D100 ~ 111, 301 ~ 310, 313 ~ 317, 402, 403
: HSS104 or 1SS133
D311, 312 : HZS6.8N(B2) or RD6.8ES(B2)


IC
C02C
LA2730
XR-1091DCP
TC9213P
M5229P
RC4565D-A
RC4565D-D
LC7522
LC7883K
UPC7805HF
UPC7812HF
PST529D
NJM780L5A
NJM79L05A
TC9162N
TC9163N
TC9164N
LC83010
TA7805S
TA7812S
UPC7905HF
UPC7812HF
LVA521S
OUTPUT
GND
INPUT
(Case)
I G O
G I O

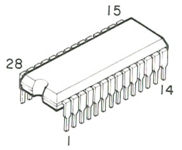

(X11-3070-00)(A/2)
X14-B/3 -CN4
3/3
C
DSP CONTROL µ-COM
IC12
IC9 RAM
IC10 RAM
IC11 DSP
IC16 (1/2)
IC15 (1/2)
IC15 (2/2)
IC16 (2/2)
IC20 5V AVR
IC21 -5V AVR
IC19 5V AVR
IC17
A/D CONVERTER
CLOCK IC18
IC23 (1/2)
IC23 (2/2)
IC24 (1/2)
IC24 (2/2)
IC25
IC26
L/R D-A CONVERTER
C/S D-A CONVERTER
L ch
R ch
C ch
S ch
VIDEO SEL
IC8
IC7 VIDEO AMP
MONITOR OUT
VIDEO OUT
VIDEO IN
BS/LD
J1
5V AVR
Q303
IC30 (1/2)
IC30 (2/2)
IC29 (2/2)
IC29 (1/2)
Q304
LEVEL SENS/CONTROL
E1
E2
15V
-15V
DVDD 5V
AVDD 5V
12V

GE-722 (2/3)

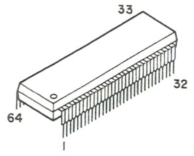
NJM79L05A


OUTPUT
INPUT
GND

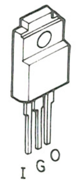
TC9162N
TC9163N
TC9164N



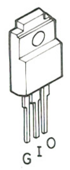
LC83010



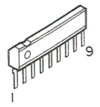
TA7805S
TA7812S



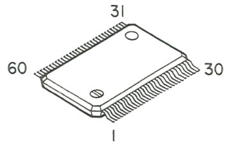
UPC7905HF
UPC7812HF



LVA521S



SN755703FT



- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

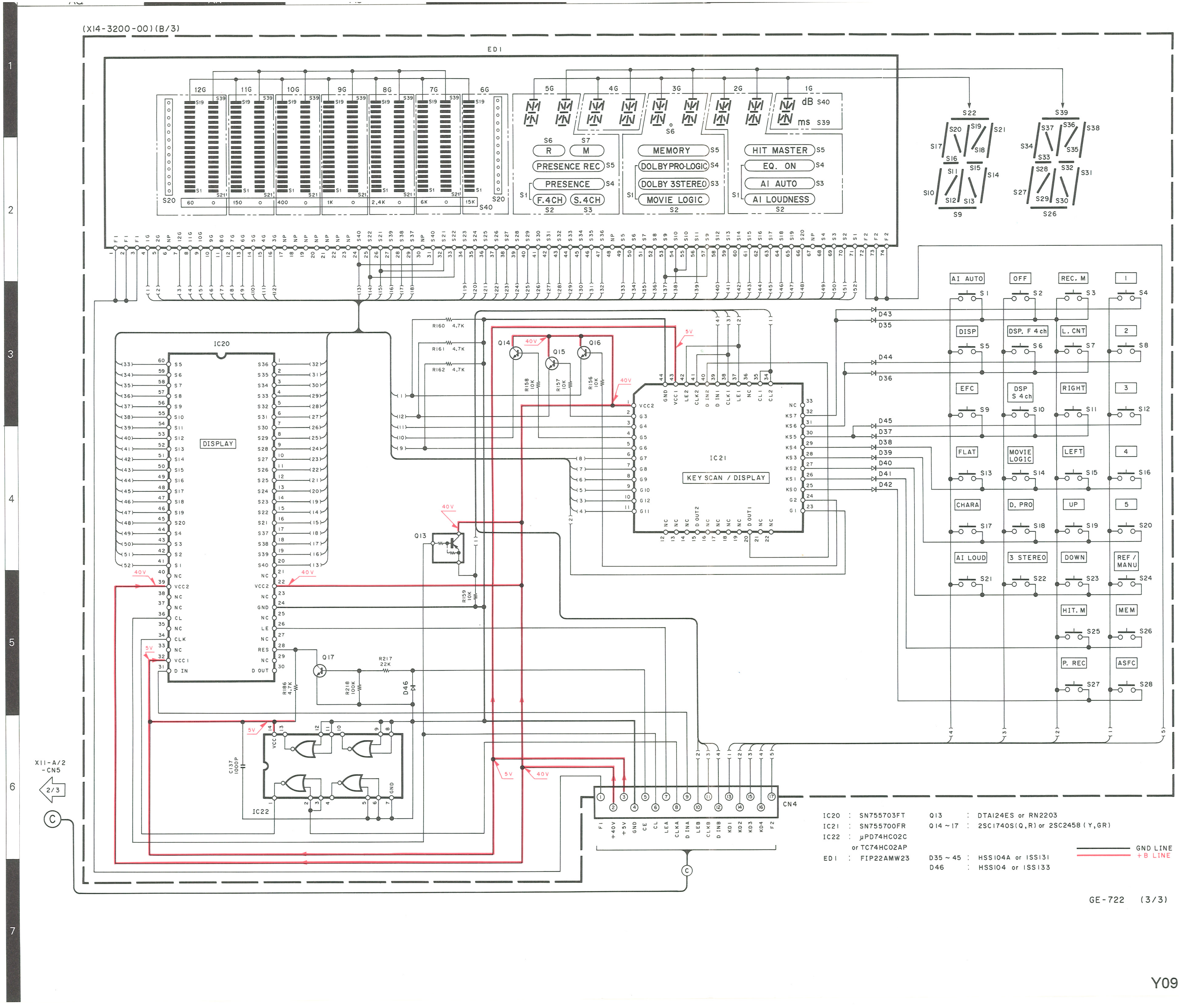
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

Y09-3800-00

GE-722

KENWOOD


(X14-3200-00)(B/3)
ED1
IC20
DISPLAY
IC21
KEY SCAN / DISPLAY
IC22
Q13
Q14
Q15
Q16
Q17
R160 4.7K
R161 4.7K
R162 4.7K
R158 10K
R157 10K
R156 10K
R159 10K
R186 4.7K
R217 22K
R218 100K
D46
C137 1000P
D35
D36
D37
D38
D39
D40
D41
D42
D43
D44
D45
40V
5V
CN4
F1
+40V
+5V
GND
CE
CL
LEA
CLKA
D INA
LEB
CLKB
D INB
KD1
KD2
KD3
KD4
F2
X11-A/2 -CN5
2/3
MEMORY
PRESENCE REC
PRESENCE
DOLBY PRO-LOGIC
DOLBY 3STEREO
MOVIE LOGIC
F.4CH
S.4CH
HIT MASTER
EQ. ON
AI AUTO
AI LOUDNESS
dB
ms
AI AUTO
OFF
REC. M
1
DISP
DSP. F 4ch
L. CNT
2
EFC
DSP S 4ch
RIGHT
3
FLAT
MOVIE LOGIC
LEFT
4
CHARA
D. PRO
UP
5
AI LOUD
3 STEREO
DOWN
REF / MANU
HIT. M
MEM
P. REC
ASFC
GND LINE
+B LINE

IC20 : SN755703FT
IC21 : SN755700FR
IC22 : μPD74HC02C
or TC74HC02AP
ED1 : FIP22AMW23

Q13 : DTA124ES or RN2203
Q14 ~ 17 : 2SC1740S(Q,R) or 2SC2458 (Y,GR)

D35 ~ 45 : HSS104A or ISS131
D46 : HSS104 or ISS133

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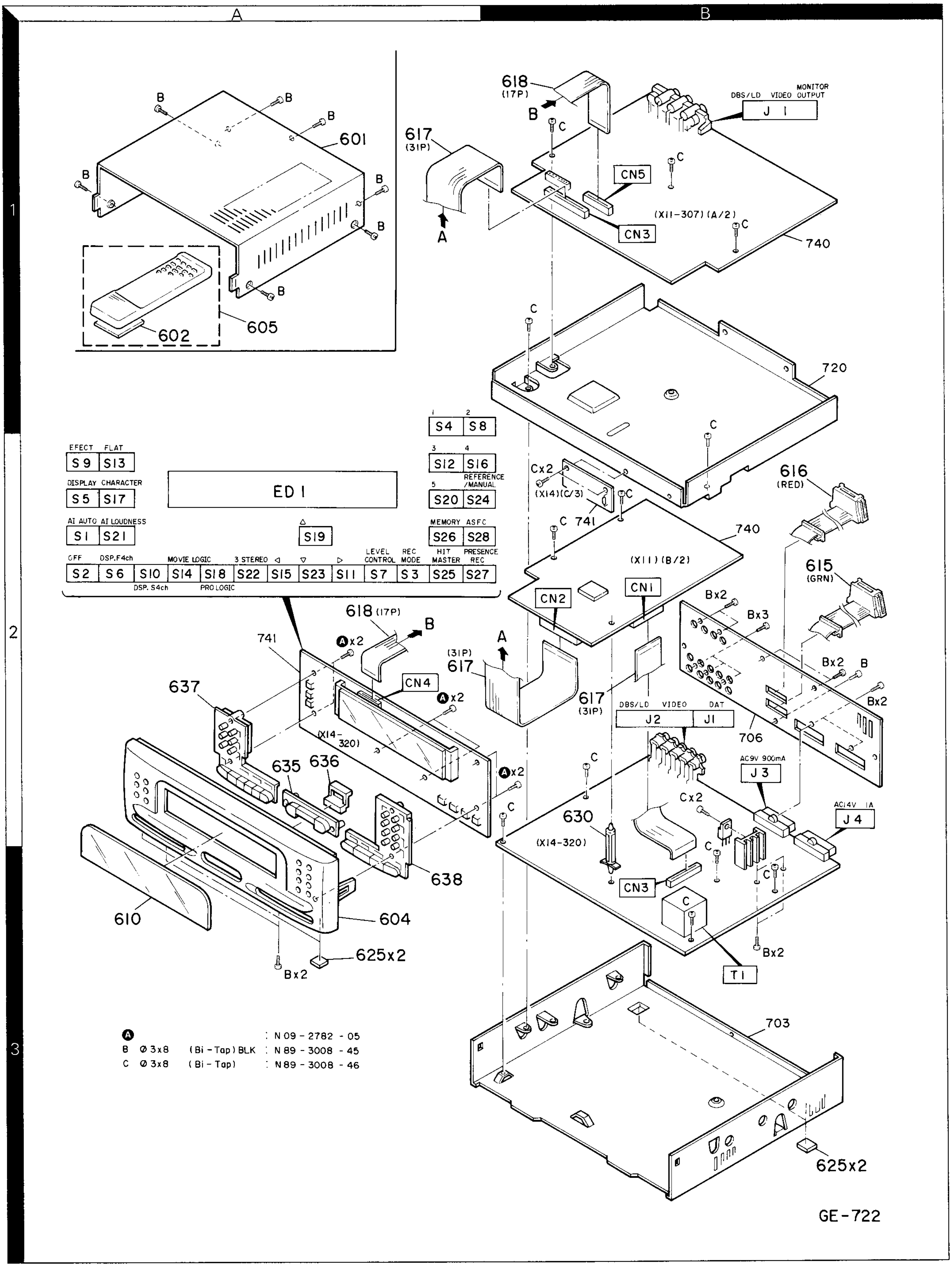
GE-722 (3/3)

Y09-3800-00

GE-722
KENWOOD

EXPLODED VIEW (UNIT)


A
B
1
2
3
B
B
B
601
B
B
B
B
602
605
618
(17P)
B
C
617
(31P)
A
DBS/LD VIDEO
MONITOR OUTPUT
J 1
C
CN5
CN3
(X11-307) (A/2)
C
740
C
720
1 2
S4 S8
EFECT FLAT
S 9 S13
DISPLAY CHARACTER
S 5 S17
ED 1
3 4
S12 S16
5 REFERENCE /MANUAL
S20 S24
AI AUTO AI LOUDNESS
S 1 S21
△
S19
MEMORY ASFC
S26 S28
OFF DSP.F4ch MOVIE LOGIC 3 STEREO ◁ ▽ ▷ LEVEL CONTROL REC MODE HIT MASTER PRESENCE REC
S 2 S 6 S10 S14 S18 S22 S15 S23 S11 S 7 S 3 S25 S27
DSP. S4ch PRO LOGIC
C
Cx2
(X14)(C/3)
C
C 741
740
616
(RED)
(X11) (B/2)
CN2
CN1
615
(GRN)
Bx2
Bx3
618 (17P)
B
741
Ⓐx2
(31P)
617
A
CN4
Ⓐx2
637
(X14-320)
617
(31P)
DBS/LD VIDEO DAT
J2 J1
Bx2 B
Bx2
706
635 636
Ⓐx2
C
C
AC9V 900mA
J 3
630
Cx2
AC14V 1A
J 4
(X14-320)
C
C
C
638
CN3
C
610
604
Bx2
T1
625x2
Bx2
703
625x2
GE-722

Ⓐ			: N 09 - 2782 - 05
B	Ø 3x8	(Bi - Tap) BLK	: N 89 - 3008 - 45
C	Ø 3x8	(Bi - Tap)	: N 89 - 3008 - 46

Parts with the exploded numbers larger than 700 are not supplied.

⁎ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

①

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
GE-722						
601	1A	*	A01-1977-01	METALLIC CABINET		S
601	1A	*	A01-1989-01	METALLIC CABINET		J
602	1A		A09-0106-08	BATTERY COVER		
604	3A	*	A60-0071-11	PANEL		
605	1A	*	A70-0535-05	REMOTE CONTROLLER ASSY		
610	3A	*	B10-1853-03	FRONT GLASS		
615	2B	*	E30-2665-05	AC POWER CORD (GREEN)		
616	2B	*	E30-2666-05	AC POWER CORD (RED)		
617	1A,2A		E31-4301-05	WIRING HARNESS (31P)		
618	1B,2A	*	E35-0214-05	WIRING HARNESS		
625	3A,3B		G11-2050-14	CUSHION		
-		*	H10-5147-02	POLYSTYRENE FOAMED FIXTURE		J
-		*	H10-5148-02	POLYSTYRENE FOAMED FIXTURE		J
-		*	H10-5192-02	POLYSTYRENE FOAMED FIXTURE		S
-		*	H10-5193-02	POLYSTYRENE FOAMED FIXTURE		S
-			H25-0397-04	PROTECTION BAG		
-		*	H50-0085-04	ITEM CARTON CASE	KYM	J
-		*	H50-0086-04	ITEM CARTON CASE	EXT	J
-		*	H50-0147-04	ITEM CARTON CASE	KYM	S
-		*	H50-0148-04	ITEM CARTON CASE	EXT	S
630	2B		J19-3163-05	UNIT HOLDER		
635	2A	*	K29-4162-03	KNOB (R/L)		
636	2A	*	K29-4164-03	KNOB (DOWN)		
637	2A	*	K29-4165-02	KNOB (FUNCTION)		
638	2A	*	K29-4166-02	KNOB (1,2,3)		
A			N09-2782-05	TAPTITE SCREW (2.6X8)		
B			N89-3008-45	BINDING HEAD TAPTITE SCREW		
C			N89-3008-46	BINDING HEAD TAPTITE SCREW		
CONTROL (X11-3070-00) : JAPAN MADE, (X11-3070-11) : SINGAPORE MADE						
C1 ,2			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C5 ,6			C90-1919-05	ELECTRO 4.7UF 25WV		
C7 ,8			CC45FSL1H221J	CERAMIC 220PF J		
C9 ,10			CE04LW1V100M	ELECTRO 10UF 35WV		
C11 ,12			CF92FV1H471J	MF 470PF J		
C13 ,14			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C19			CK45FF1H103Z	CERAMIC 0.010UF Z		
C20			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C21			CF92FV1H102J	MF 1000PF J		
C22			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C23			CK45FF1H103Z	CERAMIC 0.010UF Z		
C24 ,25			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C53 ,54			CF92FV1H303J	MF 0.030UF J		
C55 ,56			CF92FV1H472J	MF 4700PF J		
C57 ,58			CF92FV1H683J	MF 0.068UF J		
C59 ,60			CF92FV1H123J	MF 0.012UF J		
C61 ,62			CF92FV1H184J	MF 0.18UF J		
C63 ,64			CF92FV1H562J	MF 5600PF J		
C65 ,66			CF92FV1H821J	MF 820PF J		
C67 ,68			CF92FV1H133J	MF 0.013UF J		
C69 ,70			CF92FV1H222J	MF 2200PF J		

E: Scandinavia & Europe K: USA P: Canada W: Europe
Y: PX(Far East, Hawaii) T: England M: Other Areas
Y: AAFES(Europe) X: Australia

S=SINGAPORE MADE
J=JAPAN MADE

⚠ indicates safety critical components.

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②

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C71 ,72			CF92FV1H333J	MF 0.033UF J		
C73 ,74			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C75 ,76			CF92FV1H224J	MF 0.22UF J		
C77 ,78			CF92FV1H474J	MF 0.47UF J		
C79 ,80			CF92FV1H913J	MF 0.091UF J		
C81 ,82			CE04LW1A101M	ELECTRO 100UF 10WV		
C83			CE04LW1A470M	ELECTRO 47UF 10WV		
C98			CK45FF1H103Z	CERAMIC 0.010UF Z		
C99			CE04LW1A101M	ELECTRO 100UF 10WV		
C100			C90-1826-05	BACKUP 0.047F 5.5WV		
C101			CE04LW1A101M	ELECTRO 100UF 10WV		
C102			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C103,104			CK45FF1H103Z	CERAMIC 0.010UF Z		
C105			CE04LW1V100M	ELECTRO 10UF 35WV		
C106			CK45FF1H103Z	CERAMIC 0.010UF Z		
C107			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C201,202			CK45FF1H103Z	CERAMIC 0.010UF Z		
C203,204			CE04LW1A101M	ELECTRO 100UF 10WV		
C205,206			CK45FF1H103Z	CERAMIC 0.010UF Z		
C207,208			CE04LW1A101M	ELECTRO 100UF 10WV		
C209,210			CE04LW1C331M	ELECTRO 330UF 16WV		
C211,212			CC45FSL1H470J	CERAMIC 47PF J		
C213,214			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C215,216			CF92FV1H912J	MF 9100PF J		
C217,218			CF92FV1H433J	MF 0.043UF J		
C219,220			CF92FV1H821J	MF 820PF J		
C221,222			CE04LW1V100M	ELECTRO 10UF 35WV		
C223,224			CE04LW1C470M	ELECTRO 47UF 16WV		
C225,226			CC45FSL1H470J	CERAMIC 47PF J		
C227,228			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C229,230			CF92FV1H912J	MF 9100PF J		
C231,232			CF92FV1H821J	MF 820PF J		
C233,234			CF92FV1H433J	MF 0.043UF J		
C235			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C236,237			CK45FF1H103Z	CERAMIC 0.010UF Z		
C301,302			CC45FSL1H101J	CERAMIC 100PF J		
C303,304			CK45FF1H103Z	CERAMIC 0.010UF Z		
C305,306			CE04LW1C470M	ELECTRO 47UF 16WV		
C307-310			CF92FV1H103J	MF 0.010UF J		
C311			CE04LW1V100M	ELECTRO 10UF 35WV		
C312			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C313,314			CK45FB1H102K	CERAMIC 1000PF K		
C315			CE04LW1V100M	ELECTRO 10UF 35WV		
C316			CK45FF1H103Z	CERAMIC 0.010UF Z		
C317			CK45FB1H102K	CERAMIC 1000PF K		
C318			CE04LW1V100M	ELECTRO 10UF 35WV		
C320			CK45FF1H103Z	CERAMIC 0.010UF Z		
C322			CE04LW1V100M	ELECTRO 10UF 35WV		
C323-326			CK45FF1H103Z	CERAMIC 0.010UF Z		
C328			CE04LW1C101M	ELECTRO 100UF 16WV		
C329			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C330			CE04LW0J331M	ELECTRO 330UF 6.3WV		
C331			CK45FF1H103Z	CERAMIC 0.010UF Z		
C332			CE04LW1A101M	ELECTRO 100UF 10WV		
C333			CK45FF1H103Z	CERAMIC 0.010UF Z		

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❸

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C334			CE04LW1A101M	ELECTRO 100UF 10WV		
C337,338			CC45FSL1H220J	CERAMIC 22PF J		
C340,341			CF92FV1H104J	MF 0.10UF J		
C342-344			CE04LW1V100M	ELECTRO 10UF 35WV		
C345			CK45FF1H103Z	CERAMIC 0.010UF Z		
C350-352			CF92FV1H104J	MF 0.10UF J		
C353,354			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C355,356			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C357,358			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C359			C90-1333-05	NP-ELEC 22UF 10WV		
C360,361			CE04LW1C220M	ELECTRO 22UF 16WV		
C362			CE04LW1V100M	ELECTRO 10UF 35WV		
C365,366			CC45FSL1H470J	CERAMIC 47PF J		
C367			CC45FSL1H330J	CERAMIC 33PF J		
C368			CK45FF1H103Z	CERAMIC 0.010UF Z		
C371			CK45FB1H102K	CERAMIC 1000PF K		
C372,373			CE04LW1C330M	ELECTRO 33UF 16WV		
C401			CE04LW1C331M	ELECTRO 330UF 16WV		
C403			CE04LW1A101M	ELECTRO 100UF 10WV		
C404			CE04LW1A471M	ELECTRO 470UF 10WV		
C405,406			CE04LW1A101M	ELECTRO 100UF 10WV		
C407			CE04LW1A471M	ELECTRO 470UF 10WV		
C408			CE04LW1A101M	ELECTRO 100UF 10WV		
C409-414			CK45FF1H103Z	CERAMIC 0.010UF Z		
C501			CE04LW1C101M	ELECTRO 100UF 16WV		
C502			CF92FV1H334J	MF 0.33UF J		
C503			CF92FV1H333J	MF 0.033UF J		
C504			CF92FV1H104J	MF 0.10UF J		
C505			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C506			CF92FV1H472J	MF 4700PF J		
C507			CE04LW1C220M	ELECTRO 22UF 16WV		
C508			CE04LW1C101M	ELECTRO 100UF 16WV		
C509			CF92FV1H822J	MF 8200PF J		
C510			CF92FV1H273J	MF 0.027UF J		
C511			CE04LW1C101M	ELECTRO 100UF 16WV		
C512,513			CE04LW1V100M	ELECTRO 10UF 35WV		
C514			CC45FSL1H151J	CERAMIC 150PF J		
CN1 -3	1B,2B		E40-4171-05	FLAT CABLE CONNCTOR		
CN5	1B	*	E40-4157-05	FLAT CABLE CONNCTOR		
J1	1B	*	E63-0024-05	PHONO JACK		
L1 ,2			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
L3 -10			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L11 ,12			L40-2291-17	SMALL FIXED INDUCTOR		
L13 -19			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L20			L40-2291-17	SMALL FIXED INDUCTOR		
X1			L78-0244-05	RESONATOR		
X2			L77-1199-05	CRYSTAL RESONATOR		
X3		*	L78-0284-05	RESONATOR		
CP1			R90-0855-05	MULTI-COMP 100KX5 J		
CP2			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
CP3			R90-0855-05	MULTI-COMP 100KX5 J		
CP4			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP5			R90-0815-05	MULTIPLE RESISTOR		

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❹

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CP6			R90-0860-05	MULTIPLE RESISTOR		
CP7 ,8			R90-0491-05	MULTI-COMP 820KX7 J 1/6W		
CP9 ,10			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP11			R90-0850-05	MULTIPLE RESISTOR		
CP12			R90-0855-05	MULTI-COMP 100KX5 J		
R323,324			RS14KB3D820J	FL-PROOF RS 82 J 2W		
R325,326			RD14NB2E2R2J	RD 2.2 J 1/4W		
R354			RS14KB3A121J	FL-PROOF RS 120 J 1W		
R355,356			RS14KB3A151J	FL-PROOF RS 150 J 1W		
R380			RD14NB2E331J	RD 330 J 1/4W		
R381			RD14NB2E391J	RD 390 J 1/4W		
R414			RD14NB2E470J	RD 47 J 1/4W		
D13 ,14			HZS6.2N(B2)	ZENER DIODE		
D13 ,14			RD6.2ES(B2)	ZENER DIODE		
D15			HZS5.1S(B2)	ZENER DIODE		
D15			RD5.1JS(B2)	ZENER DIODE		
D100-111			HSS104	DIODE		
D100-111			1SS133	DIODE		
D301-310			HSS104	DIODE		
D301-310			1SS133	DIODE		
D311,312			HZS6.8N(B2)	ZENER DIODE		
D311,312			RD6.8ES(B2)	ZENER DIODE		
D313-317			HSS104	DIODE		
D313-317			1SS133	DIODE		
D402,403			HSS104	DIODE		
D402,403			1SS133	DIODE		
IC1		*	M38063M6-151FP	IC		
IC2			PST529D	IC(SYSTEM RESET)		
IC3			XR-1091DCP	IC(GE DISPLAY FILTER)		
IC4			LC7522	IC(7CH GRAPHIC EQUALIZER)		
IC5 ,6			M5229P	IC(7CH GRAPHIC EQUALIZER)		
IC7			MC14577A	IC		
IC8			LVA521S	IC(VIDEO SWITCH)		
IC9 ,10			HM50464RP-12	IC(RAM)		
IC9 ,10			LM33464G-12	IC		
IC11			LC83010	IC(SIGNAL PROCESSOR)		
IC11		*	LC83010N	IC		
IC12			LC66516B-4677	IC(MICROPROCESSOR)		
IC13,14			NJM4565D-D	IC(OP AMP X2)		
IC13,14			RC4565D-D	IC(OP AMP X2)		
IC15,16			UPC4072C	IC(OP AMP X2)		
IC17		*	CS5339-KP	IC(A/D CONVERTER)		
IC18			TC74HCU04AP	IC(CMOS INVERTER)		
IC19,20			NJM78L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC21			NJM79L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC22			LA2730	IC(DOLBY SYSTEM)		
IC23,24			NJM4565D-D	IC(OP AMP X2)		
IC23,24			RC4565D-D	IC(OP AMP X2)		
IC25,26	ﾁｭｳ0B		LC7883K	IC(DIGITAL FILTER & D/A CONVER		
IC28			TL431CLP	IC		
IC28			UPC1093J	IC(REGULATOR)		
IC29,30			NJM4565D-A	IC(OP AMP X2)		
IC29,30		*	RC4565D-A	IC(OP AMP X2)		
Q101			2SC1740S(Q,R)	TRANSISTOR		

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Q101			2SC2458(Y,GR)	TRANSISTOR		
Q301,302			2SD882	TRANSISTOR		
Q303			DTA124ES	DIGITAL TRANSISTOR		
Q303			RN1203	TRANSISTOR		
Q304			2SC2878(A,B)	TRANSISTOR		
STEREO (X14-3200-00) : JAPAN MADE, (X14-3200-11) : SINGAPORE MADE						
C1 -10			CC45FSL1H221J	CERAMIC 220PF J		
C11 -13			CF92FV1H103J	MF 0.010UF J		
C14			CE04LW1H471M	ELECTRO 470UF 50WV		
C15			CE04KW1E472M	ELECTRO 4700UF 25WV		
C16			CE04KW1E222M	ELECTRO 2200UF 25WV		
C17 ,18			CK45FF1H103Z	CERAMIC 0.010UF Z		
C19 ,20			CF92FV1H104J	MF 0.10UF J		
C21			CE04LW1H470M	ELECTRO 47UF 50WV		
C22 ,23			CF92FV1H104J	MF 0.10UF J		
C24 ,25			CE04LW1C331M	ELECTRO 330UF 16WV		
C26			CE04LW1E221M	ELECTRO 220UF 25WV		
C27			CF92FV1H104J	MF 0.10UF J		
C28			CE04LW1E101M	ELECTRO 100UF 25WV		
C29 ,30			CF92FV1H104J	MF 0.10UF J		
C31			CK45FF1H103Z	CERAMIC 0.010UF Z		
C32 -34			CE04LW1A101M	ELECTRO 100UF 10WV		
C41 ,42			CE04LW1V100M	ELECTRO 10UF 35WV		
C43 ,44			CC45FSL1H330J	CERAMIC 33PF J		
C45 ,46			CE04LW1V100M	ELECTRO 10UF 35WV		
C50			CE04LW1C4R7M	ELECTRO 4.7UF 16WV		
C51 ,52			CF92FV1H102J	MF 1000PF J		
C53			CC45FSL1H220J	CERAMIC 22PF J		
C54 ,55			CF92FV1H102J	MF 1000PF J		
C56 ,57			CE04LW1V100M	ELECTRO 10UF 35WV		
C58 ,59			CC45FSL1H330J	CERAMIC 33PF J		
C60 -63			CE04LW1V100M	ELECTRO 10UF 35WV		
C64 ,65			CC45FSL1H330J	CERAMIC 33PF J		
C66 ,67			CE04LW1V100M	ELECTRO 10UF 35WV		
C68			CE04LW1C4R7M	ELECTRO 4.7UF 16WV		
C69			CC45FSL1H220J	CERAMIC 22PF J		
C70			CE04LW1C4R7M	ELECTRO 4.7UF 16WV		
C71 ,72			CF92FV1H102J	MF 1000PF J		
C73			CC45FSL1H220J	CERAMIC 22PF J		
C74 ,75			CC45FSL1H330J	CERAMIC 33PF J		
C77 ,78			CF92FV1H242J	MF 2400PF J		
C79 ,80			CF92FV1H822J	MF 8200PF J		
C81 ,82			CC45FSL1H470J	CERAMIC 47PF J		
C83 ,84			CE04LW1V100M	ELECTRO 10UF 35WV		
C88 ,89			CE04LW1V100M	ELECTRO 10UF 35WV		
C90 ,91			CC45FSL1H330J	CERAMIC 33PF J		
C97			CE04LW1H4R7M	ELECTRO 4.7UF 50WV		
C99 -102			CE04LW1V100M	ELECTRO 10UF 35WV		
C103,104			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C105,106			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C107,108			CC45FSL1H330J	CERAMIC 33PF J		
C109,110			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C111			CC45FSL1H221J	CERAMIC 220PF J		
C112			CE04LW1H4R7M	ELECTRO 4.7UF 50WV		
C113			CC45FSL1H221J	CERAMIC 220PF J		

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C115			CC45FSL1H221J	CERAMIC 220PF J		
C116,117		*	C90-1853-05	ELECTRO 4.7UF 25WV		
C118,119			CC45FSL1H330J	CERAMIC 33PF J		
C120,121			CE04LW1V100M	ELECTRO 10UF 35WV		
C122,123			CF92FV1H473J	MF 0.047UF J		
C126			CF92FV1H113J	MF 0.011UF J		
C127,128			CE04LW1V100M	ELECTRO 10UF 35WV		
C129			CF92FV1H562J	MF 5600PF J		
C130,131			CE04LW1V100M	ELECTRO 10UF 35WV		
C132,133			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C134,135			CK45FF1H221J	CERAMIC 220PF J		
C136			CK45FF1H103Z	CERAMIC 0.010UF Z		
C137			C91-0757-05	CERAMIC 1000PF K		
CN1 ,2	3B		E40-4244-05	SOCKET FOR PIN ASSY		
CN3	2A		E40-4171-05	FLAT CABLE CONNCTOR		
CN4	2A	*	E40-4197-05	FLAT CABLE CONNCTOR		
J1	2B	*	E63-0023-05	PHONO JACK (DAT)		
J2	2B	*	E63-0022-05	PHONO JACK (VIDEO/LD)		
J3	2B		E08-1509-05	RECTANGULAR RECEPTACLE (BLK)		
J4	2B		E08-1510-05	RECTANGULAR RECEPTACLE (WHT)		
⚠ L1			L79-0785-05	LINE FILTER		
⚠ T1	3B	*	L07-0411-05	POWER TRANSFORMER		
-			N30-3006-46	PAN HEAD MACHIN SCREW		
-			N89-3006-46	BINDING HEAD TAPTITE SCREW		
R39 ,40			RS14KB3D101J	FL-PROOF RS 100 J 2W		
R42			RS14KB3D121J	FL-PROOF RS 120 J 2W		
R43			RS14DB3D121J	FL-PROOF RS 120 J 2W		
R168		*	RD14NB2E101J	RD 100 J 1/4W		
R193-202		*	RD14NB2E331J	RD 330 J 1/4W		
R203-205		*	RD14NB2E751J	RD 750 J 1/4W		
S1 -28			S40-1064-05	PUSH SWITCH		
D1 ,2			S5688B	DIODE		
D1 ,2			1SR139-100	DIODE		
D8			HZS6.2N(B2)	ZENER DIODE		
D8			RD6.2ES(B2)	ZENER DIODE		
D9 -12			S5688B	DIODE		
D9 -12			1SR139-100	DIODE		
D13			HZS24N(B)	ZENER DIODE		
D13			RD24ES(B)	ZENER DIODE		
D14			HZS16N(B2)	ZENER DIODE		
D14			RD16ES(B2)	ZENER DIODE		
D15			HZS8.2N(B2)	ZENER DIODE		
D15			RD8.2ES(B2)	ZENER DIODE		
D16 -31			HSS104	DIODE		
D16 -31			1SS133	DIODE		
D32			HZS3.9N(B2)	ZENER DIODE		
D32			RD3.9ES(B2)	ZENER DIODE		
D33 ,34			HZS11N(B2)	ZENER DIODE		
D33 ,34			RD11ES(B2)	ZENER DIODE		
D35 -45			HSS104A	DIODE		
D35 -45			1SS131	DIODE		

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PARTS LIST

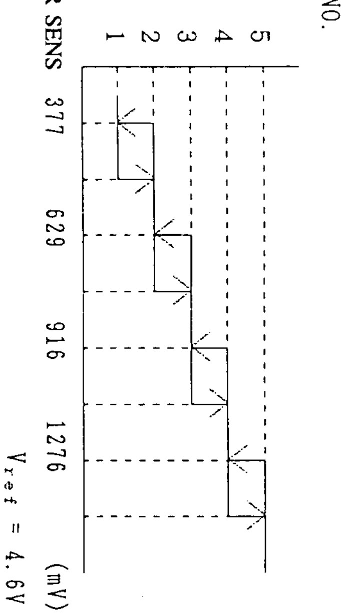
Input sensitivity

Segment	Input (dB)	Input voltage (mV)	A-D register
+9	21.5	4150.78	231
+8	20.4	3665.63	204
+7	19.2	3198.44	178
+6	18.0	2785.16	155
+5	16.8	2425.78	135
+4	15.6	2102.34	117
+3	14.4	1832.81	102
+2	13.2	1599.22	89
+1	12.1	1401.56	78
0	10.9	1221.88	68
−1	9.6	1060.16	59
−2	8.4	916.41	51
−3	7.3	808.59	45
−4	6.3	718.75	40
−5	5.3	646.88	36
−6	4.3	575.00	32
−7	3.2	503.13	28
−8	1.8	431.25	24
−9	0.2	359.38	20

V_{REF}=4.6V, 0dB=350mV,
Absolute accuracy ±3LSB=53.9mV
Segments turn on if A-D register has equal or over value compared with above table's value.

AI LOUDNESS CURVE VS LEVEL

LOUDNESS CURVE



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D46 -49			HSS104	DIODE		
D46 -49			1SS133	DIODE		
D50			S5688B	DIODE		
D50			1SR139-100	DIODE		
ED1	2A	*	FIP22AMW23	FLUORESCENT INDICATOR TUBE		
IC1			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC2			TC9163N	IC(BILATERAL SWITCH X16)		
IC3			TC9162N	IC(ANALOG SWITCH ARRAY)		
IC4			TA7812S	IC(VOLTAGE REGULATOR/ +12V)		
IC4			UPC7812HF	IC(VOLTAGE REGULATOR/ +12V)		
IC5		*	TA790012S	IC		
IC5			UPC7912HF	IC(VOLTAGE REGULATOR/ -12V)		
IC6			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC6			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC7		*	TA79005S	IC		
IC7			UPC7905HF	IC(VOLTAGE REGULATOR/ -5V)		
IC8 -11			NJM4565D-D	IC(OP AMP X2)		
IC8 -11			RC4565D-D	IC(OP AMP X2)		
IC12			TC9213P	IC(2CH ELECTRONIC VOLUME)		
IC13			NJM4565D-D	IC(OP AMP X2)		
IC13			RC4565D-D	IC(OP AMP X2)		
IC14			UPC4574C	IC(OP AMP X4)		
IC15,16			NJM4565D-D	IC(OP AMP X2)		
IC15,16			RC4565D-D	IC(OP AMP X2)		
IC20			SN755703FT	IC(DISPLAY DRIVER)		
IC21		*	SN755700FR	IC		
IC22			TC74HC02AP	IC(QUAD 2-INPUT NOR GATE)		
IC22			UPD74HC02C	IC(QUAD 2-INPUT NOR GATE)		
Q1 ,2			2SD1266	TRANSISTOR		
Q4			2SC1740S(Q,R)	TRANSISTOR		
Q4			2SC2458(Y,GR)	TRANSISTOR		
Q5 -8			2SC2878(B)	TRANSISTOR		
Q9 ,10			2SA1048(Y,GR)	TRANSISTOR		
Q9 ,10			2SA933S(Q,R)	TRANSISTOR		
Q11 ,12			2SC2878(B)	TRANSISTOR		
Q13			DTA124ES	DIGITAL TRANSISTOR		
Q13			RN2203	TRANSISTOR		
Q14 -17			2SC1740S(Q,R)	TRANSISTOR		
Q14 -17			2SC2458(Y,GR)	TRANSISTOR		

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GE-722

SPECIFICATIONS

Equalizer characteristics variable range	±10dB
Individual channel adjust :	60kHz, 150Hz, 400Hz 1KHz, 2.4kHz, 6kHz, 15kHz
Dimensions	W : 270mm H : 85mm D : 255mm
Weight (Net)	2.7kg

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For this reason specifications may be changed without notice.
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Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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